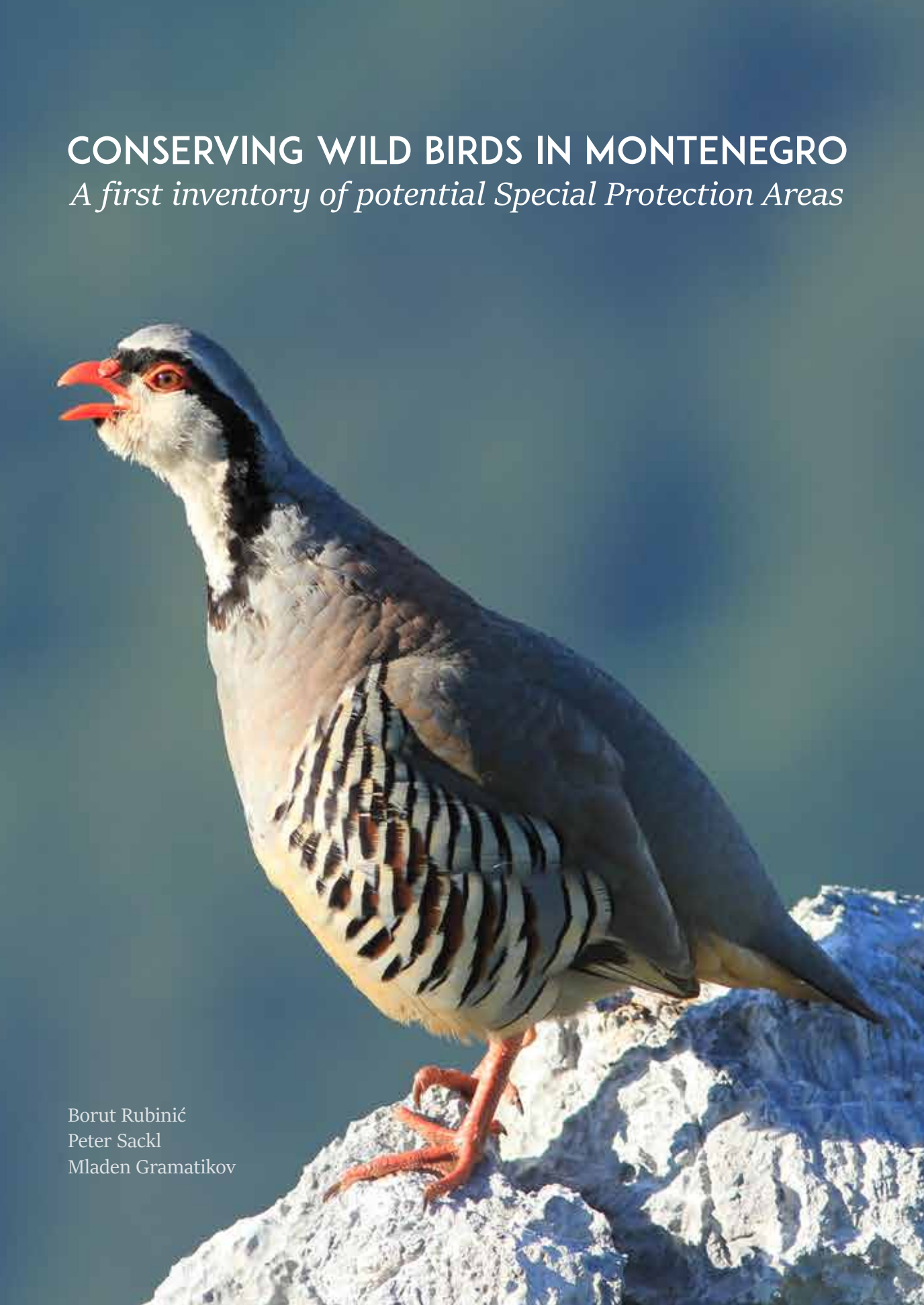
CONSERVING WILD BIRDS IN MONTENEGRO

A first inventory of potential Special Protection Areas



Borut Rubinić
Peter Sackl
Mladen Gramatikov

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A first inventory of potential Special Protection Areas

CONTENTS

LIST OF ABBREVIATIONS AND CLARIFICATIONS

B	breeding
bp	breeding pairs
EU	European Union
i	individuals
MSDT	Ministry of Sustainable Development and Tourism
NHM	National History Museum
NPCG	National Parks of Montenegro
R	resident
W	wintering
EU	European Union
EC	European Commission
BD	Birds Directive
HD	Habitats Directive
SPA	Special Protected Areas
NEPA	Nature and Environmental Protection Agency
BLI	BirdLife International
CZIP	Center for Protection and Study of Birds – BirdLife in Montenegro
IBA	Important Bird Areas
IUCN	International Union for Nature Conservation
GIS	Geographic Information System
IWC	International Waterbirds Census
AAM	AAM Management Information Consulting

CLARIFICATION

The data presented in this publication is cited in standard way, citing authors and sources in articles, publications, online sources, etc. However, a significant amount of data that is being collected on regular basis in Montenegro has not been published. There are three data sources that were most extensively used in the desk study part of this publication. The first one is the database established by Center for Protection and Research of Birds (CZIP) and the EuroNatur Foundation from Germany. This dataset mostly captures birds monitored in Ulcinj Salina and Bojana Delta area. The second source is a CZIP Database that mostly encompasses data on waterbirds from the Nikšić reservoirs and Tivat Salina. The third commonly cited source is the data on birds counted during the International Waterbird Census (IWC), that has been performed in Montenegro in more systematic way since 1991. Many people have contributed to the data stored in these three data-sets and it was impossible to list them all in this publication. The project team uses this opportunity to thank them all for their valuable contribution and hopes it will serve the purpose – making an important step towards better protection of wild birds in Montenegro. The three data sources are used in the Species Account section of the publication and are cited as CZIP/EuroNatur Database, CZIP Database and IWC Database.

CONTRIBUTORS

AUTHORS

Borut Rubinić, Bird Research and Nature Conservation, Ljubljana, Slovenia

Dr. Peter Sackl, Universalmuseum Joanneum, Graz, Austria

Mladen Gramatikov, FCG POVVIK EAD, Sofia, Bulgaria

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Project Bird Experts (in alphabetical order)

Bratislav Grubač, Mati Kose, Tomaž Mihelič, Uku Paal, Tomaž Remžgar, Borut Rubinić, Marija Šoškić, Andrej Vizi, Bojan Zeković

DATA CONTRIBUTORS

Dejan Bordjan, Tilen Basle, Blaž Blažič, Luka Božič, Dragomir Damnjanović, Enko Dreškovič, Janko Gardović, Draško Grujić, Jurij Hanžel, Ivan Kljun, Miloš Janković, Mihailo Jovićević, Marko Ostojić, Saša Popović, Katarina Paunović, Slobodan Puzović, Dimitrije Radišić, Draženko Rajković, Budimir Rašović, Borut Rubinić, Milan Ružić, Peter Sackl, Darko Saveljić, Dragan Simić, Andrej Sovinc, Nikola Stojnić, Peter Trontelj, Ondrej Vizi, Vojislav Vasić, Ana Vujović, Antun Žuljević

VOLUNTEERS

Erdal Ajanović, Nina Alorić, Nevena Babić, Illes Balint, Jelena Banićević, Nebojša Banićević, Nikola Banićević, Jelena Belojević, Blaž Blažič, Ádám Bodor, Jasna Bojović, Bojana Brajović, Danilo Brajović, Robin Brown, Ivan Budinski, Irena Cvetković, Anastasija Čarapić, Marija Čvorović, Jelena Delić, Jovana Delić, Vukajlo Delić, Til Dietrich, Monika Đonović, Kim Ferjančič, Aleksandar Fomenko, Natalija Fomenko, Damir Garčević, Jasna Gajević, Jovana Garčević, Janko Gardašević, Nives Gardašević, Janko Gardović, Zsolt Gyömbér, Eva Hajšek, Emma Heywood, Jana Iković, Jovana Janjušević, Vanja Janjušević, Blažo Jokanović, Milorad Jokić, Mihailo Jovićević, Isidora Kapa, Béla Kalocsa, Domen Kocjan, Tamás Lehmann, Ivan Lekić, Katjuša Lesjak, Gergely Lőrincz, Ana Maraš, Ivana Marković, Ninoslav Marković, Filip Matanović, Bor Mihelič, Gaber Mihelič, Kalina Mihelič, Ruj Mihelič, Tomaž Mihelič , Nevena Mrkaić, Ákos Németh, Katarina Ninković, Vasilije Nišavić, Dragan Otašević, Josip Otopal, Csaba Pálinkás, Thea Perm, Aleksandar Perović, Božo Pestorić, Danilo Pavlović, Aleksandra Popović, Zoran Popović, Teja Požar, Jovo Rabrenović, Filip Radević, Miroslav Raonić, Jelena Rajković, Milena Rajković, Aljaž Rijavec, Marija Roganović, Borut Rubinić, Marin Svit Rubinić, Tara Rubinić, Sissi Samec, Darko Saveljić, Bobo Sekulić, Liz Smith, Gábor Sóczó, Milorad Spaisić, Marija Stanišić, Igor Stojović, Žan Suljič, Dina Šabanović, Belma Šestović, Marija Šoškić, Jelena Stožinić, Enikő Anna Tamás, Barna Tarján, Jelena Tomović, Nikola Tmušić, Pia Varagič, Stevo Vasiljević, Josip Vekić, Manca Velkavrh, Péter Villányi, Balázs Vucskits, Obrad Vujović, Teodora Vujović, Mirko Vuković, Mišo Vuković, Tjaša Zagoršek, Bojan Zeković, Špela Zupančič, Kristina Živković

HUNTER'S DATA CONTRIBUTORS

Veljko Bubanja, Miličko Bulatović, Žikica Bulatović, Darko Celasan, Slobodan Džudović, Zoran Đukić, Mijodrag Gogić, Avdulah Hodžić, Milan Kilibarda, Haris Kujović, Dušan Kustudić, Duško Ivanović, Miloš Janković, Čedomir Marinković, Miloš Marković, Zoran Medenica, Pavle Međedović, Edin Mulić, Mehdija Murić, Boško Nikćević, Milić Ojdanić, Sreten Peković, Tufo Pićurica, Miloš Popović, Radovan Radović, Miroslav Raonić, Vučeta Rakočević, Darko Rašović

@B.Rubinić

PREFACE

Around 55% of Montenegro's territory are qualifying as Special Protection Area under the Birds Directive. No EU country has such a potential. Who can you blame when you are rich?

Exactly! This wonderful book, the synergy of 112 ornithologists and volunteers gathered around one goal – protecting birds and their habitats, proves the statement above.

This book is a sniper, the most precise weapon for protecting Montenegro's nature.

This book presents a consensus of ornithological knowledge and an effort to promote many important habitats which are not subject to protection in the nearest future.

The survival of birds depends on our consciousness and conscience. Borut and his colleagues gave their contribution.

The special value of this publication lies in the contribution made by the young staff from the Centre for the Protection and Research of Birds, Marija Šoskić and Bojan Zeković, as work on Natura 2000 in respect of the Birds Directive was not only focused on data collection, but also on building local capacities. This illustrates the size of the work on this project and the results presented in this book.

The data are here. The boundaries of important bird areas are clear. It is now up to the Government of Montenegro to include the data in relevant project and plans, so that people and birds can enjoy Montenegro.

I was part of this great story and I witnessed the enormous work that has been done.

Thank you so much to all authors for their effort to make my Montenegro richer and more beautiful.

Darko Saveljić,
The Founder of the Center for Protection and Research of Birds of Montenegro (CZIP)

Nature provides services vital for the existence and well-being of human kind, including pollination, carbon absorption, and the stabilisation of soils and water supplies. Nature also provide inspiration to the arts and science and contributes much to 'peace of mind'. It is however under great pressure, with the exploitation and degradation of resources far exceeding rates of renewal. Worldwide, tens of thousands of species are at risk of extinction which is putting at risk the web of life. Nature conservation is central to achieving an ecological equilibrium vital for the sustainability of human life on earth. In short, we need nature and nature needs us.

Central to nature conservation is the identification, protection and management of the most important areas, alongside the protection of species and sustainability in agricultural, forestry and fisheries. The European Union has long-recognised the importance of nature through the adoption of two ground-breaking Directives, for Birds and Habitats, which have provided the basis for the designation and conservation of the most important areas in the Natura 2000 Network. The identification of Special Protection Areas (SPAs) for birds has been at the heart of this Network. Birds are well-studied and are excellent environmental indicators and the identification and conservation of SPAs invariably means other important components of nature are also represented.

Montenegro is well-known across Europe as being rich in nature, and its forests, wetlands and coastal habitats are of global importance. This study has called on national and international experts, drawn on the best scientific information (including ground-breaking field surveys), and applied rigorous criteria to identify areas that qualify as SPAs and are more than worthy of inclusion in the Natura 2000 Network. Areas such as Skadar and Šasko Lakes, and Ulcinj Salina, are outstanding in a European context. It is hoped that the recognition of the importance of these and other areas through this study, in the context of European Directives, will help to further strengthen their conservation, particularly Ulcinj Salina which has faced serious threats.

I am pleased to acknowledge the very important role played in this study by the BirdLife Partner in Montenegro, the Centre for Protection and Research of Birds (CZIP). As lead author of the first inventory of Important Bird Areas in Europe, I am delighted to herald this most important study. I wish all involved the determination and best of success in conserving these areas for the future. It is not just a matter of nature conservation, it is a vital contribution towards the sustainability of life on earth.

Richard Grimmett,
Director for Conservation, BirdLife International

The natural heritage of Montenegro is one of the fundamental values of our country and a determinant of its spatial identity. A 'biodiversity hotspot' is a description used for Montenegro in domestic and international scientific circles.

In the process of EU integration, one of the most important indicators of success in Chapter 27 (Environment and climate change) is nature protection, whereby the most important task is the establishment of the Natura 2000 network. Natura 2000 is a network composed of areas important for the conservation of endangered species and habitats in the EU. The network was established in 1992 and covers around 18% of the terrestrial area in EU member states, as well as about 4% of sea waters. As such, it represents the largest ecological network in the world under a single regulatory framework. At present, the Natura 2000 network provides protection for over 200 habitat types and for more than 1000 rare and endangered species.

The portions of the Montenegrin territory which will be designated as Natura 2000 areas will become part of the EU common biodiversity. In accordance with the EU practice, the Montenegrin Natura 2000 network will be divided into two types of areas. The first type will be defined on the basis of the Birds Directive and will be included in the network for the conservation of bird species. I would like to note that there are 5 internationally Important Bird Areas in Montenegro: Lake Skadar, Ulcinj Salina, Lake Šas, Durmitor and Biogradska Gora.

The second type of Natura 2000 areas will be those included for the conservation of other species and habitat types under the Habitats Directive. Here I would like to note that in Montenegro more than 3,200 plant species have been recorded and 27 sites have been identified as Important Plant Areas, among other things. In addition, the country also has an exceptionally diverse fauna, while about 60% of its territory is covered by forests.

As regards birds, Montenegro is among the first countries in the Balkans which has been recognized for its abundance of birds. As early as in 1896, with the publication of the book "Ornis Balcanica: Montenegro" written by Othmar Reiser and Ludwig von Führer, Montenegro took its place on Europe's ornithological map and to this day has remained an attractive destination for bird-watching. This status was achieved thanks to the great richness of biodiversity, as well as to the presence of species of special importance in Europe.

Montenegro is located in one of the four most important bird corridors in Europe – the Adriatic Flyway, through which millions of birds migrate to Africa and back every year. The richness of the bird fauna of a country is viewed through the total number of registered species or, more frequently, through the number of nesting species. The density index of nesting species in Montenegro is well above the Balkan average. The ornithofauna of Montenegro consists of 348 registered bird species (out of a total of 533 species recorded in Europe, which accounts for 65% of the European ornithofauna).

Compared to European countries, the number of 213 species nesting in Montenegro is high, taking into account that Montenegro is one of the smallest European countries by area. Montenegro has more nesting species than the United Kingdom, Czech Republic, Portugal, Denmark and Slovenia.

The first overview of the ornithological richness of Montenegro in the form of a list of species was published as the Catalogus faunae Jugoslaviae by the Academy of Sciences and Arts of Slovenia in 1973, within the List of Bird Fauna of the SFR Yugoslavia.

The book "Conserving Wild Birds in Montenegro" represents an indispensable guide for anyone who intends to get acquainted with the birds of Montenegro, as well as a reference source of technical information. The most important information about the status, temporal, ecological and geographical distribution is provided for each bird species. The publication represents just the beginning of the collection of new data and further research on Montenegro's ornithofauna. I would like to note that the special contribution of the book lies in the inspiration of the generations of present and future ornithologists and bird lovers to 'get to grips' with field work and protection of endangered bird species.

Ivana Vojinović,
Director General of the Directorate for Environment

It is becoming more and more evident that Montenegro is a hotspot of biodiversity in the Balkans. This also holds true when it comes to the Montenegrin bird fauna. Unfortunately, the value of biodiversity is not yet clearly understood by decision-makers and society.

The project "Establishment of the Natura 2000 network in Montenegro", financed by EU funds, contributed significantly to laying the groundwork for the designation of future Natura 2000 sites, which are referred to in this book as Special Protection Areas (SPAs).

Ornithologists have been exploring Montenegro for decades, but their work has mainly been concentrated on a few 'charismatic species in top locations' such as Lake Skadar, Ada Bojana or Ulcinj Salina, whereas other areas of the country remain white spots on the map. In 2017 and 2018, the first systematic research on bird species was carried out by the project team, including in almost unknown areas in the northern parts of Montenegro.

The results are exceptional and confirm a rich biodiversity, which includes bird species that are endangered or even on the verge of extinction in Europe and other parts of the world.

Due to their inaccessibility, many areas in Montenegro are probably among the best preserved in the Balkan region. However, those areas are not protected in any form, while development activities such as road construction, unsustainable resource use in forestry, agriculture and water management are progressing fast.

Therefore, the results delivered by this project provide a solid basis for the designation of future SPAs in accordance with European law. But there is still a long way to go, as further research is necessary to fill the gaps in the knowledge of species distribution, ecology and related domains.

As a Team Leader of the Natura 2000 project, I wish to express my gratitude to all international and national experts and to all those who contributed to the results, be it by providing data, information, photo material or by being actively involved in field research and/or analysing and interpreting data.

Sissi Samec,
Team Leader of Natura 2000 project in Montenegro

EXECUTIVE SUMMARY

Montenegro is on its way to join the European Union (EU) and has to fulfil necessary obligations during this accession process. With respect to nature protection, there is the need to implement the two EU Nature Directives, the Birds and the Habitats Directives. As regards the Birds Directive, Candidate Countries are obliged to propose Special Protection Areas – so-called SPAs – and to notify the European Commission (EC) on meeting this obligation prior to accession. SPAs are a part of the future Natura 2000 network. The primary objective of the Birds Directive is to help protecting and managing areas, which are important for rare and vulnerable bird species because they use them for breeding, feeding, wintering or migration.

This publication is produced under the IPA project: 'Establishment of Natura 2000 network, Montenegro' (Service contract no. 374-589) which was carried out between 26th April 2016 and 25th April 2019 and funded by the European Union. The Natura 2000 project provides technical assistance to the Ministry of Sustainable Development and Tourism (MoSDT) and the Nature and Environmental Protection Agency (NEPA). The main goal of the project within the bird component was the elaboration of 'Proposals for potential Special Protection Areas in Montenegro'.

The project was implemented by Consortium made of seven members led by Hungarian company AAM Management Information Consulting Ltd. (AAM Consulting).

The book 'Conserving Wild Birds in Montenegro' presents the project results of the bird component and is summarizing the extensive work of many people. The first 6 months of the project were devoted to establishing the bird team, preparatory activities such as stakeholder analysis, discussing and developing methodologies/monitoring protocols, testing in the field, etc. and the planning for the work. The overall process included several important steps:

Checking the status of knowledge at the beginning of the project

Already after first discussions it became evident, that before 2017, a comprehensive knowledge on the distribution and population sizes of the birds in Montenegro was largely lacking, with almost the only exceptions being Skadar Lake with Bojana river and Ulcinj Salina wetland complex that were subject of more systematic quantitative researches.

Comprehensive stakeholder analysis

Contacts with all existing stakeholders with expert knowledge in wild birds and bird conservation were initiated. Specifically, a close working relationship was established

with the main stakeholder – the Centre for Bird Protection and Research (CZIP), an NGO acting as the Montenegrin partner of Birdlife International (BLI). Apart from that close cooperation was established also with other organizations and individuals (namely with the Beneficiaries – the Ministry of Sustainable Development and Tourism and the Nature and Environmental Protection Agency), but also with other stakeholders such as National Parks of Montenegro (NPMN) and Nature History museum (NHM).

Preparation of the 1st draft Reference List of birds

Based on discussions within the bird team and relevant stakeholders, a 1st draft Reference List of birds was produced, listing 167 species (+ 34 species that were kept on the list for further consideration) that are potentially important for the SPA selection in Montenegro. This national checklist provides a baseline, defining threatened (birds on the Annex I Birds Directive and birds threatened on the global IUCN Red List) and regularly occurring breeding, wintering or migratory bird species in the country.

Development of national SPA selection criteria

Each country has to develop national SPA selection criteria taking into account criteria for Important Bird Areas (IBA) introduced by BirdLife International. IBAs are precursor of SPAs classified according to the Birds Directive (cf. the ruling of the European Court of Justice in Case C-3/96). Specifically, the criteria C, used for the designation of IBAs in European Union Member States as required by the 'Birds Directive' had to be considered.

Elaboration of the List of Qualifying species for SPA selection (criteria species)

Using the draft Reference list as a baseline, each species had to be cross checked with the IBA categories and criteria. As a result, the project experts team agreed on a List of Qualifying species for SPA selection, which currently consists of 76 species which should be the primary focus for research.

Desk Study analysis

A comprehensive desk study analysis of existing published and non-published data was carried out in 2017. 215 records of historical data and 393 records of recent ornithological data were collected from 58 published sources (more than three times more sources were examined), from 23 different professional and non-professional bird experts. In addition, 2.161 data inputs from three on-line bird watching platforms were assessed. All the 2.769 data records were geo-referenced in Geographic Information System (GIS).

Field data collection

Field work was conducted focusing at Annex I and Globally threatened species (qualifying species). The most comprehensive and focused field survey of birds of Montenegro ever was carried out in all regions of the country, trying to understand the distribution and population status of target species. The nationwide surveys are necessary due to the specificity of the SPA selection criteria: for the majority of the species, the five most important areas need to be selected. In order to reach that goal, a full comprehensive knowledge on their distribution and population sizes are necessary. Field work was done using selected methodologies. In total, 10 bird experts were engaged for this work, 7

international and 3 national experts. A total of 419 work days were devoted to the field work by the 10 bird experts. In addition to that, 334 work days were carried out by volunteers. In total, 112 volunteers took part in the field work. As a result of this activity, an additional 3.943 records were collected, making a total of 6.712 records being used to assess the bird data for the selection of the first inventory of SPAs in Montenegro.

Field data assessment and evaluation

All the data collected in the field was assessed, combined with the desk study data where relevant and evaluated according to standard criteria. Data quality varied from species to species and in some cases differed among different sites. In some cases data allowed very precise population estimates, and in other cases only rough assumptions. Species with poor data weren't included as criteria species at the end of the process (i.e. European Honey Buzzard, Common Nightjar, Black, Middle-spotted and Grey-faced Woodpeckers and some others). For ten species where enough data was available, an indicative spatial model of the potential distribution has been developed. For these species with wide distribution in the country on the basis of the spatial model and local calculated densities, more precise population estimates and distribution patterns were provided.

Draft SPA proposals and consultation

The result of all the preparatory, field assessment and consultation activities a 1st draft of potential SPAs in Montenegro was produced. During the last months of the project a series of workshops and consultations about the SPA selection was carried out, involving main stakeholders, namely national bird experts, Beneficiary, MoARD, hunting associations, NPMN and NHM.

The Results

The results of this study are organized in two main sections that present the core findings of the work performed in the framework of the Natura 2000 project.

- The Species Account section describes the comprehensive, up to date review of the knowledge on the distribution, occurrence and population state of all 72 qualifying species that were identified for the purpose of selecting the first inventory of potential SPAs in Montenegro.
- The Site Account section describes 33 identified potential SPAs, providing a general overview, map of the site, qualifying (criteria) species, main threats and general conservation guidelines. This assessment of SPAs is the first of its kind in Montenegro and is based on the best available experts' knowledge about selected bird species at the moment. The proposed SPAs cover 53,5% of the country's territory.

After the presentation of the main outputs of the project, the publication looks also to some other issues, such as the international importance of Montenegro for birds, current and future threats and provides the strategic directions ('Roadmap') for follow up activities to finalize the SPA proposals before EU accession.

INTRODUCTION

Special Protection Areas (SPA) are sites within the Natura 2000 network, required by the Birds Directive (Directive 79/409/EEC of the European Parliament and of the Council, amended and newly codified in 2009 into the Directive 2009/147/EC). The primary objective of the Directive is to help protect and manage areas that are important for rare and vulnerable bird species, because they use them for breeding, feeding, wintering or migration. In general, SPAs should be designated by any country before its accession to the European Union (EU).

This publication is the result of an extensive work of many people in the framework of the IPA project: 'Establishment of Natura 2000 network, Montenegro' (Service contract no. 374-589 and further on 'Natura 2000 project') that was funded by the European Union in the period between 26th April 2016 and 25th April 2019.

The project provides technical assistance to the Ministry of Sustainable Development and Tourism and the Nature and Environmental Protection Agency. Its purpose is to carry out necessary activities to start laying the foundations for the designation of the future Natura 2000 network including both the Habitats and the Birds Directives.

The project is implemented by a Consortium made of seven members, led by Hungarian company AAM Management Information Consulting Ltd. (AAM). AAM is the largest independent Hungarian consultancy established in 1994, one of the very first management consulting companies to implement ISO 9001 quality assurance system in Hungary. After seven years of successful local operation, International Business Unit of AAM were established and entered the international market in 2001. The company operates on projects all over the world with a special focus on Western Balkans. These projects are mostly funded by international donors such as the EU, World Bank, EBRD or UN. The members of the consortium are as follows: FCG International Ltd is a member of FCG Finnish Consulting Group Ltd (FCG), Institute of Marine Biology, Kotor; POVVIK EAD; SI ECO CONSULT LTD; Institute for Biological Research "Sinisa Stankovic", and University of Belgrade (IBISS).

The Natura 2000 project employed a core team, the Project Leader (Sissi Samec), the Key Expert for the Habitats Directive (Jaanus Paal), the Key Expert for the Birds Directive (Borut Rubinić and his precursor Mati Kose) and the Project Assistant (Jelena Banićević). The bird team included also several local and international Non-Key Experts namely, Bratislav Grubač, Mati Kose, Tomaž Mihelič, Uku Paal, Tomaž Remžgar, Marija Šoškić, Andrej Vizi and Bojan Zeković. Worth to mention is Darko Saveljić, representative of the Beneficiary (NEPA) closely involved in all project activities and therefore, considered as

a team member. Furthermore, the Natura 2000 project established a Verification Board, and the responsible member is Ondrej Vizi, a prestigious ornithologist, already retired but well-known in the country.

The bird team was responsible for implementing numerous activities leading to the main project result, the proposals for potential SPAs in Montenegro. The overall process included several important activities described in the methodology and process.

The publication is structured in six chapters as follows:

Chapter 1: Introduction

Chapter 2: Methodology and process – describing the project activities and the process leading to the main output, 'Proposals for potential Special Protection Areas (SPAs) in Montenegro'

Chapter 3: Results and discussion – the main outputs of the project, the Species Accounts and Site Accounts

Chapter 4: International importance

Chapter 5: Threats

Chapter 6: List of references

METHODOLOGY AND PROCESS

The status of knowledge at the beginning of the project

Montenegro's avifauna was a subject of different levels of research from the mid 19th Century onward (i.e. Küster 1843, Fritsch 1858, Brusina 1891, Reiser & Führer 1895 etc.), but comprehensive surveys of any kind on national level were never carried out. Few surveys in the 20th and at the beginning of the 21st Century were conducted in a more systematic way, assessing birds and bird communities of specific, bird rich areas in Montenegro. However, the majority of those were not quantitative, neither methodologically sound and provided only a general idea of bird communities of a specific area in the country. Such surveys were carried out for example on Durmitor mountain (Vasić et al. 1990), in Piva area (Vučković & Vizi 1977), in Tara canyon (Vučković & Vizi 1977, Vizi 1990), Morača canyon (Vizi 1992, Saveljić 2008b), Cijevna canyon (Ljucović 1995), on Lovćen mountain (Vizi 1994), on Tivat Salina (Saveljić & Rubinić 2006), Nikšić reservoirs (Vizi O. 1981), and in Bojana Delta (Vasić et al. 1977, Vasić 1979). Only a handful of sites in Montenegro were surveyed in a more systematic way, providing good estimates of (main bird species') populations. Those are Bojana Delta (Schneider-Jacoby et al. 2006, Sackl et al. 2017), Ulcinj Salina (Puzović 2002, Schneider-Jacoby 2006, Sovinc et al. 2017, Sackl et al. in prep.), Skadar Lake (Mihelič et al. 2017, Vizi et al. 2018), Orjen mountain (Rubinić 2016), and to a smaller extent also Ćemovsko polje, where the breeding community of larks and pipits was surveyed (Thelin in prep.). In addition to that, the avifauna of two areas was assessed through pre-construction studies of effects of wind farms: Možura (Rubinić et al. 2011) and Krnovo (Vizi A. 2011, Saveljić 2014). Further on, some few areas in Montenegro are subject of regular monitoring of birds throughout the year by the staff and volunteers of CZIP: Ulcinj Salina, Tivat Salina and Nikšić reservoirs. In addition, the International Waterbird Census (IWC) started on Skadar Lake in 1990 and was carried out annually in this site (i.e. Vasić & Vizi O. 1990, 1992, etc.), and since 2007, also in the majority of other main Montenegrin wetlands (i.e. Vizi et al. 2007, 2008 etc.). The compiled data is available upon request by the National History Museum (Vizi A. unpubl.). Between 2013 and 2017 data on breeding birds was being collected by few volunteers and professionals from Montenegro and abroad in the framework of the European Breeding Bird Atlas, led by the European Bird Census Council. This data provides only a very general additional knowledge on the national level as it was collected on 50x50 km squares, but some of the records were used also in this research.

As a conclusion, it is evident that before 2017, a comprehensive knowledge on the distribution and population sizes of the birds in Montenegro was largely lacking, with almost the only exceptions being Skadar Lake with Bojana river and Ulcinj Salina wetland complex that were subject of more systematic quantitative researches.

Data sources and data assessment – a desktop research

One of the most important steps in the SPA selection process within the Natura 2000 project in Montenegro

was the collection of existing published and non-published data on selected bird species, and the identification of the gaps that would help the project to prioritize field work in the 2017 and 2018 field seasons. The data for all the 92 selected species (76+16) that were originally identified as potential SPA qualifying (criteria) species was assessed. Main data sources categories were:

1. Published data

The project took into consideration both historical (everything published before the year 2000) and recent data (data published after the year 2000). The most important sources for both sets of data have been identified and collected and consisted of articles in ornithological magazines, monographs, governmental and civil society reports.

2. Unpublished data

Another important source of data used in this assessment was personal data from people that are, or were active in bird research and bird watching and visited the country once or more times. 215 records of historical data and 393 records of recent ornithological data were collected from 58 published sources from 23 different professional and non-professional bird experts. All the records were assessed and presented in textual form and geo-referenced in the GIS.

3. Citizen science data

Additionally, valuable unpublished recent data from existing on-line platforms for birdwatchers was taken into account. 2.161 data inputs from three on-line bird watching platforms (namely observation.com, ebird and bird track) where observations from researchers and other birders were critically assessed and used as an additional source of information for the data assessment and planning of field work.

4. Data from International Waterbird Census (IWC) and waterbird monitorings

The data from the International Waterbird Census surveys – organized annually in Montenegro in a more extensive way since 2007 and in selected wetlands since 1990, was used to identify the regular occurrence, maximum and average numbers of waterbirds and general population trends in most important wetlands in the country. Additionally, the compiled data for areas where regular (monthly or more frequent) monitoring of waterbirds occurs, such as Ulcinj Salina, Tivat Salina and Nikšić reservoirs, was provided by CZIP and by Peter Sackl personally. Dalmatian Pelicans on Skadar Lake are counted by a consortium of partners (Noé Conservation, NHM, CZIP, NPMN) and the data is publicly published on e-mail groups.

5. Data from hunting associations

For two special hunting reserves: Piva and Komovi Special Hunting Reserves, elaborated hunting management plans were developed. They include data on important bird species: Capercaillie Tetrao urogallus, Hazel Grouse Bonasa bonasia, and Rock Partridge Alectoris graeca that were used for the SPA selection. As a main general source of information about population estimates, the most recent hunting estimates for the management of hunting species from 31 hunting areas and 4 special hunting reserves from 2014 and 2016 were used. In addition, special questionnaires were prepared to collect more detailed data for two most important species in terms of SPA selection: Rock Partridge and Capercaillie. For Capercaillie, data from all 15 hunting areas and hunting reserves where the species occurs were obtained, while for Rock Partridge the project team only managed to get data from 17 out of 33 hunting areas where species occurs.

Comprehensive stakeholder analysis

Contacts with all existing stakeholders with expert knowledge in wild birds and bird conservation were initiated. A close working relationship was established with the main stakeholder – the Centre for Bird Protection and Research (CZIP), an NGO acting as the Montenegrin partner of Birdlife International. This organization has done most of the work within the task of the identification of Important Bird Areas – a precursor of SPAs to be classified according to the Birds Directive (cf. the ruling of the European Court of Justice in Case C-3/96). Apart from that, close cooperation was established also with other organizations and individuals (namely with the beneficiaries – the Ministry of Sustainable Development and Tourism and the National Environment Protection Agency; but also with other stakeholders: National History Museum, National Parks of Montenegro, Ministry of Agriculture and Rural Development etc., hunting associations, bird experts and birdwatchers from Montenegro and surrounding countries of Serbia, Croatia, Slovenia, Bosnia and Herzegovina, Austria, Hungary and Germany).

Bird Reference List for Montenegro

The first preparatory work for the implementation of the EU Birds Directive in a country is to define the checklist of species, considered as birds with important conservation status. To elaborate this list, one has to review and analyse the existing avifaunistic data sources available in the country. Due to the specific situation with low number of resident ornithologists working in the country, the bird fauna of the Montenegro is relatively little researched and the baseline data was never extensively assessed and stored in one place. Fortunately, the CZIP has recently put efforts to compile the national checklist of birds with their status and type of presence in the country[1].

This national checklist – called Bird Reference List – provides a baseline, defining threatened (birds on the Annex I Birds Directive and birds threatened on the global IUCN Red List)

[1] *Saveljić & Jovićević 2015*

and regularly occurring breeding, wintering or migratory bird species in the country. This first draft list consisted of 167 species (+ 34 species that were kept on the list for further consideration) that are potentially important for the SPA selection in Montenegro. The Birds Reference List is one of the outcomes of the project (available on request), presented to the Beneficiary and approved by the project Steering Committee. The Reference List is building the baseline document for the preparation of the List of Qualifying species (cf. 2.5).

Development of the national SPA criteria for Montenegro

Montenegro has made initial steps towards the site protection of the birds, meeting to some extent the expectations of the Birds Directive. Most of the work has been done by the CZIP, within the task of the identification of Important Bird Areas – introduced by BirdLife International and a precursor of SPAs classified according to the Birds Directive (cf. the ruling of the European Court of Justice in Case C-3/96). The preliminary list of existing (designated by BirdLife International) and potential IBAs can be found on: http://www.birdwatchingmn.org/podrucja-za-ptice/iba-crne-gore.

There are different categories of IBA criteria at three geographical levels, Global = A, European = B, but the most important for SPA selection are European Union = C criteria which are introduced for the designation of IBAs in European Union Member States as required by the 'Birds Directive'. The C criteria IBAs are further known as Special Protected Areas (SPA). Following the standard methodology of the EU-specific C-criteria, intensive work has been done related to IBA categories, thresholds and other data, necessary for the national SPA selection criteria.

The Reference List (167+34) was once again considered for the preparation of SPA criteria, yet this time compared against more strict criteria and above all compared against most relevant qualitative population estimates. The methodology required an analysis of the status of occurrence of each species in the country and to justify the reasons for inclusion or exclusion of species from the bird species Reference List of Montenegro for the purposes of identification of SPAs. A wide range of literature had to be reviewed for this task and the following steps were necessary:

1. *Agreement on the national populations of the breeding and wintering bird species*

Detailed discussions with CZIP (which collected data for the BirdLife 2015 publication) and other experts in ornithology were held in order to reach agreement on the national populations based on the best available information. Special attention was given to key bird species upon which SPAs will be designated. The gaps were largely identified and data collection in next two field seasons was organized in order to collect as many data as possible during the 30 months of the project implementation. Updated population estimates of key species were finally used for production of the List of Qualifying species and thus for the final selection and delineation of SPAs.

2. *Consultation with BirdLife International Secretariat on nationally agreed national populations and the EU populations of the target bird species that have to be used for setting the numerical criteria*

Parts of the criteria's require the use the EU populations as reference to set up national thresholds. Thus, the BirdLife International Secretariat had to be involved in this process. This consultation with BirdLife International Science Team (Mike Evans, Sofia Capellan) in Cambridge was set up from the very start of the SPA criteria selection process and ensures also the validation of the criteria used for selection of SPAs on a national level. Threshold values were developed directly by Birdlife International Global Secretariat and provided to the project team.

3. Agreement on the criteria for selection of SPAs in Montenegro

A workshop was organized for interested stakeholders (civil servants, scientific institutions, bird protection NGOs, independent bird experts, etc.) where the elaborated selection criteria for SPAs were presented and discussed. As a result of the workshop the final version of elaborated criteria was confirmed.

4. Official adoption of SPA selection criteria

There is the need for national recognition of the SPA selection criteria. During the process of elaborating the criteria, the possibilities for legal/official adoption of the SPA selection criteria were discussed with the Beneficiary, the Ministry of Sustainable Development and Tourism. The very criteria were both agreed by the consortium of experts, and officially approved by the Beneficiary in June 2017.

As everywhere, also in Montenegro all the relevant bird species were assessed against the IBA C-criteria. The document 'Development of national SPA selection criteria in Montenegro' is another available output of the project explaining in detail the technical steps used to check each species against the C1-6-criteria (available on request).

C1 – Species of Global conservation concern - *An important number of globally threatened species or species of global environmental concern is present at the area*

C2 – Concentrations of species threatened at the EU level - *Site holds at least 1% of the migratory population or population of species threatened at the level of EU*

C3 – Concentrations of migratory species that are not threatened at the EU level - *Site holds at least 1% of the migratory population or population of species not threatened at the level of EU*

C4 – Large concentrations - *Site regularly holds at least 20.000 migratory waterbirds or at least 10.000 pairs of migratory seabirds of one or more species*

C5 – Large concentrations – bottleneck sites - *Site is a bottleneck in migratory corridor if at least 5000 storks (Ciconidae) or 3000 raptors (Accipitriformes, Falconiformes) or cranes (Gruidae) migrate over the site during spring or autumn migration.*

C6 – Species, threatened at the level of EU - *Site is one of 5 most important sites in European region (NUTS) for species or subspecies threatened at the level of EU.*

Worth to mention is the national rule: Site is designated as SPA only if the species population at the site reaches minimum population thresholds:

I 2 pairs or 6 individuals – for raptors with large home ranges (Golden Eagle, Short-toed Eagle, Griffon vulture, etc.) and for Dalmatian Pelican;

II 5 pairs or 15 individuals for other non-passerine bird species;

III 15 pairs or 45 individuals for passerines (songbirds).

List of Qualifying species for SPAs selection

All species from the Birds Reference List were assessed against the general SPA selection criteria (cf. 2.4) and their known distribution and population numbers. The checklist was also updated with the latest BirdLife conservation status assessment for European Birds (BirdLife International 2004), Annex I Birds Directive status, and the most recent IUCN global and EU threat statuses. The List of Qualifying species for SPA selection currently consists of 76 plus 16 species for which additional research is needed to add them on the list. These species should be the primary focus of the research to be done between 2019 and 2025. This list represents all the bird species that reach national criteria for SPA selection in Montenegro, is one of the project outcomes and is available on request.

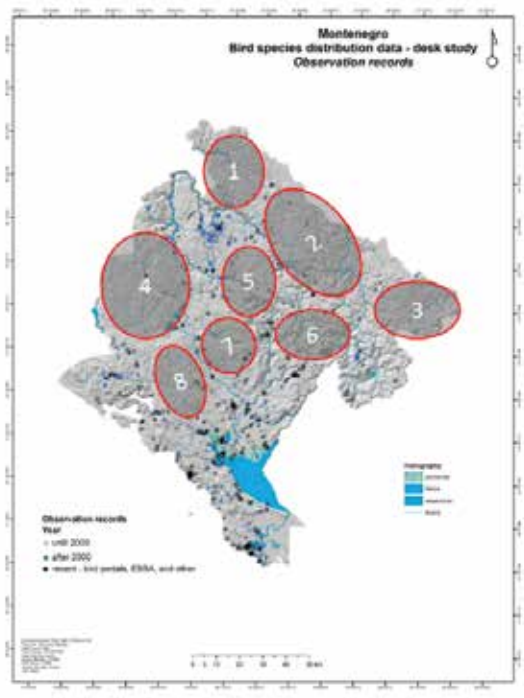


Figure 1: The general gap analysis shows that the main unexplored areas in terms of birds were in the N and C part of Montenegro (excluding the vicinity of the capital Podgorica and Skadar lake area). These areas were priority areas for surveys in 2018 field season. 1 – NW Montenegro, 2 – N Montenegro, 3- NE Montenegro, 4 – Piva area, 5 – Sinjajevina, 6 – Bjelasica and Prošćenje Mountains, 7 – Moračke Mountains and Prekornica, 8 – Cetinje Municipality.

Field data collection

Usually, the baseline for the selection of Special Protection Areas in other countries are breeding bird atlases and other national-wide inventories of breeding, wintering and/or migrating birds. Since Montenegro's most comprehensive national wide survey was done as far back in time as the end of 19th Century (Reiser & Führer 1895), the need for an intensive

nationwide survey was evident, making the field work in 2017 and 2018 extremely challenging. It was obvious that it would be impossible to carry out an ornithological atlas in two years with very limited research capacities and available days for field work. Therefore, the project team narrowed down the research scope to a few categories of birds and areas in the country that were least known. The main focus in these two years was therefore to get as much data on areas and bird species where gaps in knowledge were most evident. After the completion of the desk study work, a comprehensive analysis of the gaps was performed and used to determine the surveys in 2018 field season and beyond.

The process of gap identification included the production of species specific maps, indicating gaps in knowledge and potential distribution according to suitable habitats. The described analysis was discussed with bird experts from Montenegro to agree on priority species and areas of research in 2018. A list of 33 species was produced that were subject of focused research during the 2017 and 2018 field work.

Table 1: Species of birds that were a subject of focused research during the 2017 and 2018 field work. x indicates the year when the species was surveyed. In bold are indicated species that were due to sufficient amount of data a subject of detailed population assessments.

SPECIES	2017	2018	PRE-SELECTED	OPPORTUNISTIC	TYPE OF SURVEY	PLAYBACK (YES/NO)
Ixobrychus minutus	X	X	X	X	transect	no
Pernis apivorus		X		X	area	no
Circaetus gallicus	X	X		X	area	no
Accipiter brevipes	X	X		X	area	no
Aquila chrysaetos	X	X	X		point	no
Falco biarmicus	X	X	X		point	no
Falco peregrinus	X	X	X		point	no
Bonasa bonasia	X	X	X	X	**transect/ point**	**yes**
Tetrao urogallus	X	X	X		area	no
Alectoris graeca	X	X	X	X	**transect/ point**	**yes**
Crex crex	X	X		X	area	no
Streptopelia turtur	X	X		X	**transect**	**no**
Bubo bubo	X	X	X		point	no
Glaucidium passerinum	X	X		X	**point**	**yes**
Strix uralensis	X	X		X	point	yes
Aegolius funereus	X	X		X	**point**	**yes**

SPECIES	2017	2018	PRE-SELECTED	OPPORTUNISTIC	TYPE OF SURVEY	PLAYBACK (YES/NO)
Caprimulgus europaeus	X		X		transect/ point	yes
Alcedo atthis	X		X		transect	no
Coracias garrulus	X	X	X		area	no
Picus canus	X	X	X	X	transect/ point	yes
Dryocopus martius	X	X	X	X	transect/ point	yes
Picoides tridactylus	X	X	X	X	**transect/ point**	**yes**
Dendrocopos leucotos	X	X	X	X	**transect/ point**	**yes**
Dendrocopos medius	X		X		transect/ point	yes
Lullula arborea	X	X		X	**area**	**no**
Anthus campestris	X	X	X	X	**transect**	**no**
Anthus pratensis	X	X		X	area	no
Acrocephalus melanopogon		X	X		ringing	yes
Hippolais olivetorum	X	X	X		transect	no
Sylvia nisoria		X	X	X	**transect**	**no**
Ficedula semitorquata		X	X		area	yes
Lanius minor		X	X	X	area	no
Emberiza hortulana		X	X	X	area	no
Raptor and crane bottleneck		X	X		point	no

Methodology for field work and data management

Field work was organized in order to collect data and information on species distribution. As this data provides the baseline for proposals of potential Natura 2000 sites, efficient and accountable data management had to be ensured. Customized field maps indicating survey point or transects were prepared as well as different inventory forms/monitoring protocols for selected species (a document summarizing all methodologies/monitoring

protocols is available). Tablets with pre-installed customized field data collection application – Fulcrum – were used for this purpose. The main objective of the application was to ensure easy data collection in the field and smooth data flow to one unified database. Main data attributes were collected in this way – date, weather conditions, data compiler, species, number of individuals, breeding status and behaviour, comments etc. All the data was automatically geo-referenced.

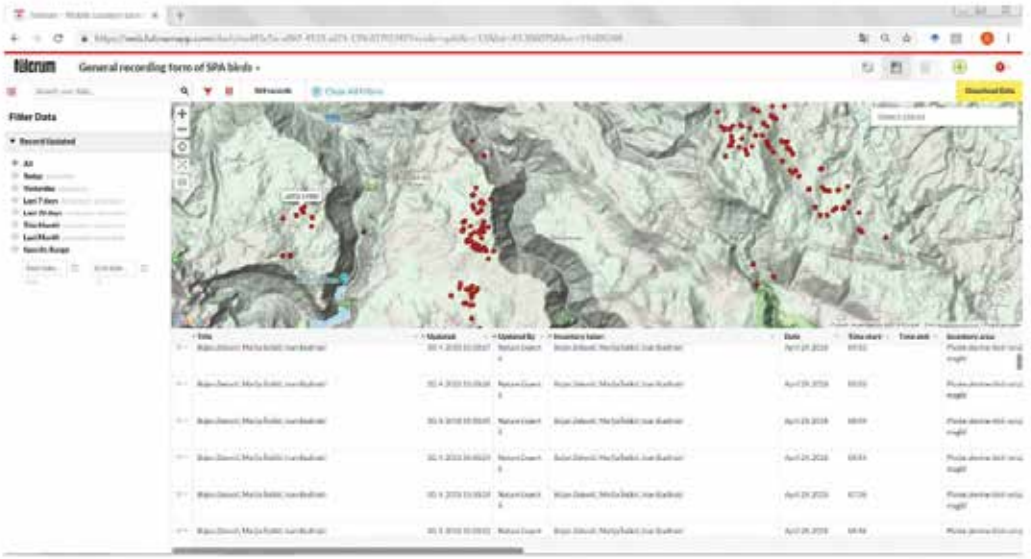


Figure 2: An example from the Fulcrum data management account is shown.

Survey methods

Due to time and capacity constrains a combination of different approaches was used to collect data on different species. In general standard survey methods were used (i.e. Bibby et al. 1995, Südbeck et al. 2005), but the approach varied from pre-selected to opportunistic.

1. Pre-selected surveys

Areas (polygons), transects or points were chosen well ahead of the actual survey and were determined in GIS. This approach was used for Golden Eagle Aquila chrysaetos, Peregrine Falco peregrinus and Lanner Falcon F.biarmicus, Capercaillie, Euasian Eagle Owl Bubo bubo, European Nightjar Caprimulgus europaeus, Common Kingfisher Alcedo atthis, European Roller Coracias garrulus, Middle-spotted Leiopicus medius and Syrian Woodpecker Dendrocopos syriacus and at partly Common Little Bittern Ixobrychus minutus, Rock Partridge, other woodpeckers, and Lesser-grey Shrike Lanius minor. The research of Moustached Warblers Acrocephalus melanopogon organized by volunteers from the Hungarian NGO Kiskunság Society of Protection of Birds, and was carried out through trapping with mist nets with the use of play-back on pre-selected locations of Buljarica and Šasko Lake (part of the Bojana Delta SPA).

Figure 3: Examples of pre-selected areas: a) pre-selected survey points for Eagle Owl Bubo bubo, b) pre-selected survey transects for Rock Partridge Alectoris graeca, c) pre-selected polygons for Capercaillie Tetrao urogallus

2. Opportunistic surveys

By opportunistic surveys, this means those researches that were not planned ahead, meaning that exact areas were not pre-selected prior to the actual field work. In most cases, the survey areas were chosen right before the arrival to the location. Potential areas for survey of selected species were chosen and only approximate survey areas were determined prior to the actual survey. The transects, areas or points were stored in GIS for later assessment during the actual survey. Almost all surveys of wood owls, Corncrakes Crex crex, Eurasian Turtle Doves Streptopelia turtur, Wood Larks Lullula arborea, Tawny Pipits Anthus campestris, Barred Warblers Sylvia nisoria, Lesser-grey Shrikes and Ortolan Buntings Emberiza hortulana were carried out in this way and the methodology was also partly used for Hazel Grouse, Rock Partridge and woodpeckers. Such an approach was chosen partly due to insufficient knowledge of the potential areas where these species are present. The other reason was the economy of the effort. The pre-selected surveys were combined with the opportunistic ones in order to use limited time and resources. All observations of European Honey-buzzards Pernis apivorus, Short-toed Snake Eagles Circaetus gallicus and Levant Sparrowhawks Accipiter brevipes were collected during surveys of other species and can be therefore considered as opportunistic.

Capacity needs and the involvement of volunteers

For the field research, 10 bird experts were engaged, 7 international and 3 national experts. A total of 419 workdays were devoted to the field work. A substantial amount of data used in this assessment was collected with the help of volunteers. During the 2,5 years of the field work 112 people took part in different surveys, contributing 334 man-days and helping this assessment becoming a more extensive and a more relevant baseline of the data on threatened birds in Montenegro. Volunteer help was used and for surveys

of Eurasian Eagle Owl, Capercaillies and other boreal species found in the mountains of Northern Montenegro. To be able to perform a synchronized count of several tens of survey points to record vocal activity of Eagle Owls, a large number of volunteers is essential. As a result of this activity, an additional 3.943 records were collected, making a total of 6.712 records being used to assess the bird data for the selection of the first inventory of SPAs in Montenegro.

Figure 4: Training for volunteers just before the survey of the Eagle Owl Bubo bubo survey, the so called »Bubo night«, carried out at the coast of Montenegro, February 2018. @B.Rubinić.

Similarly, the surveys of Capercaillie, woodpeckers, owls and Hazel Grouse wouldn't be that effective without the help of devoted volunteers that were trained for specific surveys. The mountains of Montenegro can be remote and steep, and working in pairs is a necessary safety precaution. Altogether, 26 people were involved in the surveys of boreal birds in Northern Montenegro (bird camps: 27th April – 5th May and 1st to 10th October 2018), more than half of them being volunteers from Montenegro, Slovenia, Croatia, Serbia, Germany, Austria and Bosnia and Herzegovina.

Figure 4: A group of volunteers taking part in a Capercaillie Tetrao urogallus and other boreal birds surveys in N Montenegro. Sušica canyon, Durmitor, May 2018. @J.Banićević.

Figures 5: Early morning field work during Capercaillie Tetrao urogallus surveys in N Montenegro in 2018. @U.Paal.

Field data assessment and evaluation

For 10 species enough data was collected through the field work allowing basic assessment in GIS. The results were used to better assess local densities of selected species and estimate their populations on site and country level with a higher degree of scientific certainty.

For the purpose of the study, an indicative spatial model has been developed. Based on the data collected on the distribution of a bird species, one can predict the extent of its spatial distribution using limit values of key factors. The developed model is indicative, accounting the sampling volume, the localization and semantic accuracy of data, the mobility of the modelling object (bird) and the non-definitive („hard“) environmental factors (i.e. land coverage, forest type etc.). Due to “hardness” of the input data on which the distribution depends, the model can be defined as largely experimental.

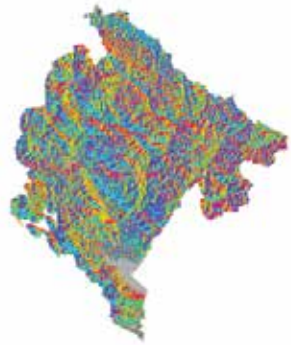
The following sets of data were used for the model:

- Distribution and numbers from field surveys, literature reviews, etc. – feature point data

- Digital Elevation Model for MNE 20m – raster data, derived from https://land.copernicus.eu/imagery-in-situ/eu-dem/eu-dem-v1.1

DEM

Slope



Aspect

- CORINE Land Cover 2012 – feature polygon data used for comparison and verification https://land.copernicus.eu/pan-european/corine-land-cover/clc-2012

- Built up, urbanized, artificial and soil sealed areas – raster data derived from combination of Imperviousness products 2015 and European Settlement 2012, Rel. 2017 map from Copernicus Programme
https://land.copernicus.eu/pan-european/high-resolution-layers/imperviousness
https://land.copernicus.eu/pan-european/GHSL/european-settlement-map

- Forest areas – raster data derived from related Copernicus products from 2015 (forest type and tree cover density)
https://land.copernicus.eu/pan-european/high-resolution-layers/forests

- Grassland areas – raster data derived from related Copernicus products from 2015
https://land.copernicus.eu/pan-european/high-resolution-layers/grassland

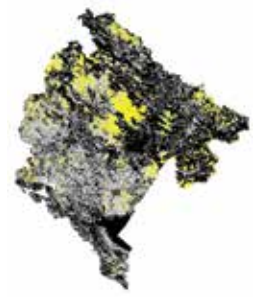
- Hydrography data – raster and feature polyline and polygon data derived from related Copernicus products from 2015
https://land.copernicus.eu/pan-european/high-resolution-layers/water-wetness
https://land.copernicus.eu/imagery-in-situ/eu-hydro/eu-hydro-public-beta

- Road network of MNE – feature polyline data

Tree cover

Water and wetness areas

Imperviousness

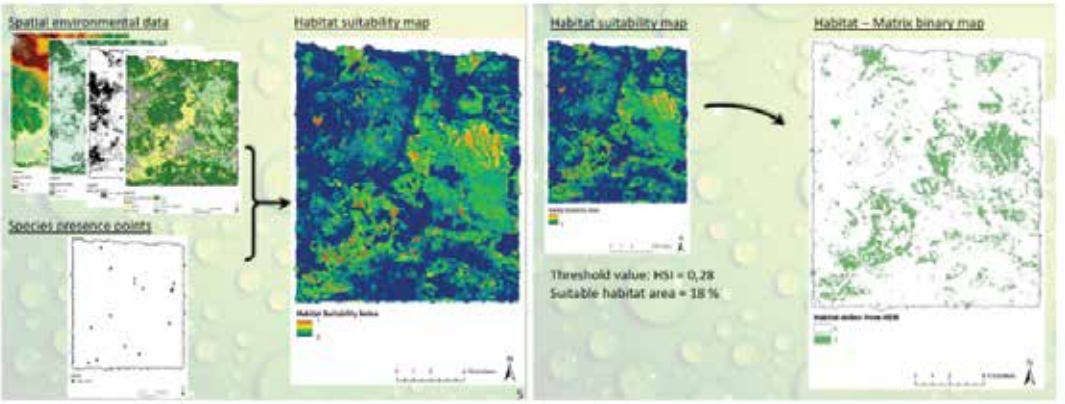


Grasslands and rest of (TC+WW+I)

All this data was downloaded raw from the respective links or collected from official sources, processed and stored in a geo-database. The coordinate system used to store and project the data was WGS_1984_UTM_Zone_34N

On this basis, a spatial interpolation distribution model was constructed. The model, based on the sample generated by the studies, illustrates the degree of probability of distribution of the species (without taking into account the influence of ecological factors that further modify the actual distribution). This was done using the IDW (Inverse distance weighted), which is based on the understanding that by moving away from the measured locations, their „influence“ decreases. Meaning that when talking about prediction of the spatial distribution of the species, priority is given to the locations where it is certainly established (confirmed record). As a result, a stratum layer was obtained, which was subsequently reclassified according to the natural thresholds in the values of the six classes: very low probability, low, average medium high, high and very high in terms of occurrence of the species. Later the result was reclassified in binary raster – suitable-unsuitable.

Each species in its spatial distribution is influenced by different localization factors,



depending on its ecological „elasticity". As the spatial distribution of a population is defined primarily by the concentration of the constituent individuals, the model uses a kernel function to calculate the predicted density around a known (measured) location (i.e., the number of identified individuals). It is assumed that the concentration is highest in the measured location and gradually decreases with the distance from it.

The models obtained are only indicative and have been prepared for prediction purposes. They can be used for future projects related to predicting changes in the environment and their impact on the number and distribution of bird species. For this, however, it is necessary to provide adequate baseline data reflecting the parameters of the natural environment, human activity and localization factors.

Population estimates

For the majority of birds in this assessment, the population densities were done as a result of intensive and long-term data collection schemes. For example, monitoring of breeding colonies (herons, egrets, ibises, cormorants, pelicans, waders, terns etc.), migratory populations (long-term monitoring schemes in main wetlands), collecting data on the nesting territories (Golden Eagle), wide-scale surveys of territorial behaviour (Eurasian Eagle Owl), international mid-winter counts of waterbirds (IWC) and so on. A portion of species has a different ecology and distribution in Montenegro and is not captured in regular surveys, lives in more remote and hardly accessible areas and/or requires specific survey methodology to be detected. These are in majority raptor species, boreal and other forest and mountain species, species of rocky landscapes, more elusive waterbirds (i.e. crakes, bitterns, kingfishers) and some others. As explained in previous chapters, some species were under specific focus of the research during the 2017 and 2018 field seasons due to the lack of data and understanding of their distribution and population numbers in the country. For 10 of these species, a sufficient number of data was collected to perform the assessment, described in the section 2.8 and to estimate their populations in a more comprehensive way.

Table 2: Species of birds with sufficient amount of records allowing more detailed population estimates. The number of survey points is indicative for Wood Lark, Tawny Pipit and Barred Warbler (the surveys were performed on transects, not on points). All the records refer to the data within the proposed SPAs.

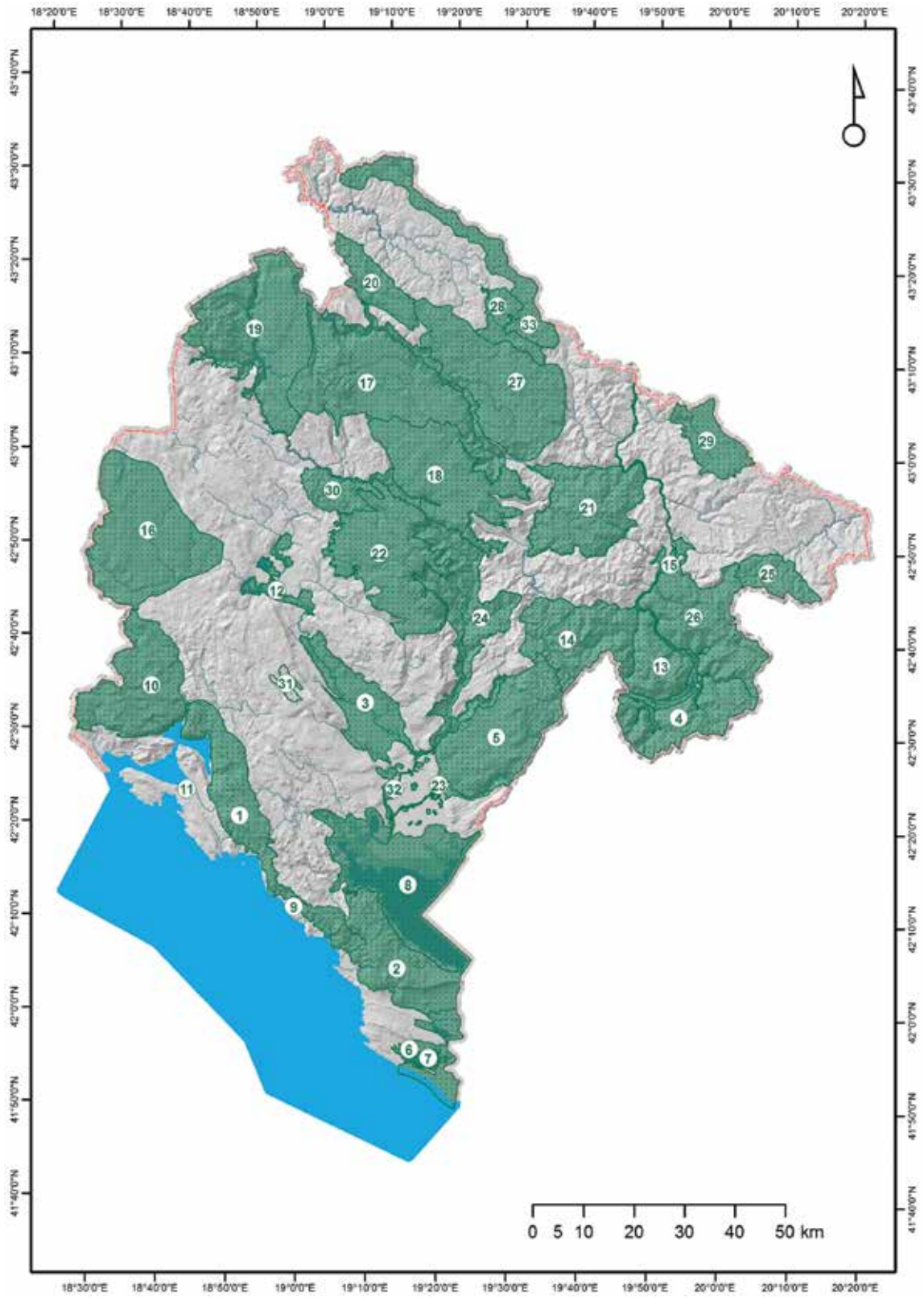
COMMON NAME	SCIENTIFIC NAME	N OF SURVEY POINTS (WITHIN PSPA)	N OF RECORDS (WITHIN PSPA)
Rock Partridge	*Alectoris graeca*	346	225
Hazel Grouse	*Bonasa bonasia*	389	187
European Turtle Dove	*Streptopelia turtur*	167	172
Boreal Owl	*Aegolius funereus*	90	81
Pygmy Owl	*Glaucidium passerinum*	78	70
White-backed Woodpecker	*Dendrocopos leucotos*	176	119
Three-toed Woodpecker	*Picoides tridactylus*	205	154
Wood Lark	*Lullula arborea*	164	184
Tawny Pipit	*Anthus campestris*	78	81
Barred Warbler	*Sylvia nisoria*	258	252

Draft SPA proposals and consultations

During the last months of the project, a series of workshops and consultations about the SPA selection was carried out, involving main stakeholders, namely national bird experts, Beneficiary, MoARD, hunting associations, NPCG and NHS.

The map of potential SPAs of Montenegro

1. Lovćen and Paštrovići
2. Rumija Mountain
3. Bjelopavlići Valley
4. Prokletije Mountains
5. Kuči and Cijevna canyon
6. Ulcinj Salina
7. Bojana Delta
8. Skadar Lake
9. Buljarica
10. Orjen Mountain
11. Tivat Salina
12. Nikšićko polje
13. Visitor and Zeletin
14. Komovi Mountains
15. Lim Valley and Plavsko Lake
16. Bratogošt
17. Durmitor
18. Sinjajevina
19. Piva
20. Ljubišnja
21. Bjelasica Mountain
22. Moračke Mountains and Maganik
23. Ćemovsko polje
24. Morača and Mala Rijeka canyons
25. Hajla
26. Šekular, Mokra, Cmiljevica
27. Kričak
28. Mataruge
29. Pešter
30. Bukovica Valley and Vojnik Mountain
31. North-Western Garač Mountain
32. Podgorica and Gornja Zeta
33. Kovač, Gradina, Crni Vrh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@P.Sackl

SPECIES

@B.Mihelič

Rock Partridge
Alectoris graeca

CRITERIA TRIGGERED: *C1 (40 p)*
STATUS: B
POP. MNE: 3.500 – 5.500 bp
% OF POP. IN PSPA: ca. 75%
N OF PSPA WITH OCCURRENCE: min. 19

Rock Partridge is one of the most important flagship bird species of Montenegro due to the high absolute values of the resident breeding population and the percentage of global population present in this small country.

Already in the 19th Century the species was described to be abundant in karstic areas of Montenegrin hills and mountains. Ecology of the species was already well known and described back then. Rock Partridges were mostly observed in bare and steep rocky areas with sparse grass and typical rocky vegetation in summer, while the birds came in more densely vegetated areas during winter, when they were very often hunted in large numbers. This activity was interestingly already observed as unsustainable at the end of 19th Century, when massive numbers of caught Rock Partridges were sold in local markets for food and as caged birds. Interestingly the researchers of that time didn't know of any sightings in Montenegrin higher mountains, but did not exclude the probability of species' presence in these areas (Reiser & Führer 1896).

Rock Partridge is a species that was traditionally a subject of attention by hunters, and many hunting associations in Montenegro still pay a lot of attention to this species. On the other hand the ornithological research mostly excluded systematic surveys of Rock Partridge, probably mostly due to the specific ecology of being a bird of relatively inhospitable and inaccessible areas of barren, broken and steep rocky landscapes. As a result of this "ignoring" attitude, the ornithologist's data on Rock Partridge was scarce and mostly consisted of accidental sightings of flushed birds, more rarely singing males or family groups of recently fledged youngs. Nevertheless, the Rock Partridge was recorded in

many areas during bird surveys in 20th and beginning of 21st Century: Durmitor (Vasić et al. 1990, Saveljić & Rubinić 2010), Cijevna canyon (Grubač 2000), Hajla (Grubač & Puzović 1999), Piva and Komarnica areas (Vučković & Vizi 1977), Tara canyon (Janković unpubl.), Rumija (Bordjan 2006b), Orjen (Rubinić 2016), Zeletin (Šoškić, unpubl.) and so on. Yet in terms of the knowledge about overall distribution, abundance and population sizes the species remained almost completely unknown and the previous population estimates (i.e. 3.000 – 4.000 breeding pairs, Puzović et al. 2003) by the ornithological community were based on best expert opinions, rather than on comprehensive knowledge. The latest population estimate was 1.300 breeding pairs (Delić 2013). On the other hand the population estimates given by the hunting community were seen as too arbitrary and fluctuated severely, i.e. from a maximum of 31.653 individuals estimated in 2009 to a minimum of 17.363 individuals estimated in 2012 (Agency for the Protection of Environment in: Delić 2013).

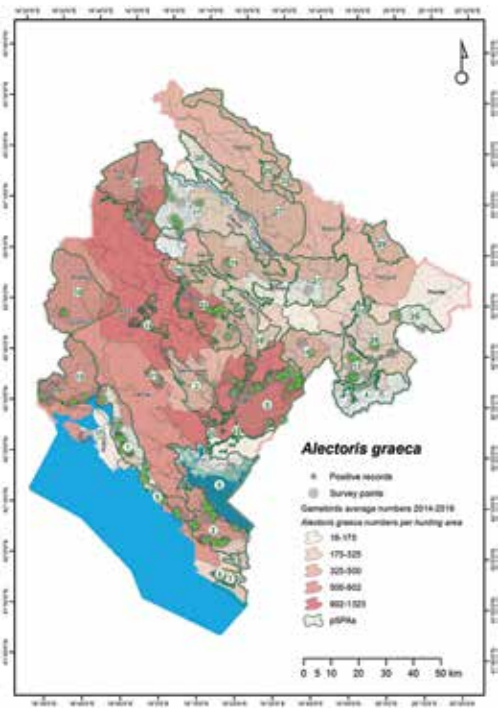


Figure 6: Survey points and positive records of the surveyed Rock Partridge Alectoris graeca in 2017 and 2018. Colors of the hunting areas correspond with estimated number of Rock Partridges.

In order to get a better understanding of the distribution and numbers of Rock Partridge in Montenegro an extensive effort was put in surveys of this species during the 2017 and 2018 field seasons. Surveys, using standardized point-transect play-back methodology (i.e. Denac et al. 2013) were carried out on 433 survey points. Survey points were used in pre-selected areas across the country, from low lying mountain slopes on the coast (Rumija, Lovćen, Paštrovići), through mid-elevations in rocky landscapes across the southern and central Montenegro and all the way to the elevations above 2.000 m a.s.l. in Central and Northern Montenegro. When combined with published and unpublished data, we managed to collect 228 records of Rock Partridge, vast majority (84,3%) of which were spontaneously singing males or males responding to the playback. Data was analysed using the indicative spatial model, which took into account different data sets: land cover, elevation, slope, aspect, imperviousness etc. Based on these attributes, population densities of Rock Partridge presence (the basic considered unit is a breeding pair) were calculated for different areas in the country. In addition questionnaires were prepared and sent to the relevant hunting associations where Rock Partridges occur. The idea was to compare knowledge from both hunters and ornithologists to get as complete picture about the species in the country as possible. Data was obtained by 17 out of 33 hunting

areas and special hunting reserves where species is allegedly present in Montenegro. For the remaining 16 hunting areas the data on Rock Partridge population estimates sent to the Ministry of Agriculture and Rural Development (MoARD) by hunting associations for 2014 and 2016 was used.

The results of both data sets – ornithological and those collected by hunting associations using questionnaires were comparable. The main deviation was between the calculated ornithological data and the data sent to the MoARD by hunting associations, and in some cases also between the data sent by hunting associations through questionnaires and the general population estimates in hunting areas sent to MoARD. The corrected (using questionnaires) hunting estimates and the newest ornithological estimates are very similar. The estimates are similar both on site level (with few exceptions – i.e. Special Hunting Reserve Piva, and hunting area Plužine), and as well on national level.

Table 3: Estimated number of pairs of Rock Partridge Alectoris graeca on the basis of own and the records provided by hunting associations.

POTENTIAL SPA	MIN	MAX
Kuči Mountains and Cijevna canyon	400	500
Lovćen and Paštrovići	300	400
Moračke Mountains and Maganik	240	360
Sinjajevina	200	300
Morača and Mala rijeka Canyons	190	230
Rumija Mountain	160	320
Komovi Mountains	150	200
Bratogošt	135	200
Kovač, Gradina, Crni Vrh	120	175
Bjelasica Mountain	100	200
Durmitor	100	150
Pešter	100	130
Piva	100	300
Šekular, Mokra, Cmiljevica	100	200
Bukovica Valley and Vojnik Mountain	100	150
Prokletije Mountains	60	120
Orjen Mountain	50	150
Visitor and Zeletin	50	115
Total pSPA	2.655	4.200
Total Montenegro	**3.500**	**5.500**

The newest ornithological estimate is therefore 3.500 to 5.500 breeding pairs (10.500 – 16.500 individuals), while the corrected hunting estimate is 4.000 to 6.000 breeding pairs or 12.000 to 18.000 individuals. This means that between 7% and 20% of the global population (83.500 – 147.000 individuals) breed in Montenegro (BirdLife 2018c).

Rock Partridges are generally recorded in all parts of the country. Lowest altitude where the species was recorded is 114 m a.s.l. in Brca cliff next to the coastal town of Bar, and highest 2.083 m a.s.l. on Zeletin Mountain in NE Montenegro. Several evident centres of distribution can however be distinguished: middle-to high-elevations of central mountain massifs around Morača River canyons, especially Kuči, Brotnjik, Živa and Maganik Mountains, northern and eastern Moračke Mountains and Sinjajevina, higher parts of the coastal mountain chains of Rumija, Lovćen, Paštrovići and Orjen. This coincides with information provided by hunters' associations, except for the Piva region where we failed to find areas with high densities of the species and some areas where high abundance of Rock Partridges are reported by hunters, but where we haven't had the opportunity to conduct surveys, i.e.: Cetinje area, Nikšićka Župa and surrounding areas, Pljevlja municipality etc.

We can conclude that Rock Partridge is a locally common and abundant species in Montenegro. The barren, sparsely vegetated areas, abundant with peaks, broken terrain, steep slopes and rocky outcrops of the cliffs and gorges are an optimal habitat for this species, especially where these landscape characteristics are combined with presence of domestic grazing animals and absence of larger urban areas (constant human disturbance). A lot of additional research is however needed to understand more precisely this species' distribution and locate all the most important areas, but also to identify what are the main threat factors for the species. It is extremely important to understand these to be able to manage properly this extremely significant part of the global population of Rock Partridge and ensure its long-term existence and healthy population.

Due to the importance of Montenegro for Rock Partridge we selected all areas with a population of at least 40 breeding pairs as potential SPA. This is actually a conservative approach, upon which we raised the minimum threshold for the C1 criteria from the proposed 20 breeding pairs to 40 breeding pairs in order to capture the most important areas and to avoid the dispersive effect of having too many small areas listed as SPAs.

@T.Mihelič

Hazel Grouse
Bonasa bonasia

CRITERIA TRIGGERED: *C6 (5 bp)*
STATUS: B
POP. MNE: 3.000 – 6.000 bp
% OF POP. IN PSPA: 50%
N OF PSPA WITH OCCURRENCE: > 20

According to Reiser & Führer (1896) Hazel Grouse was a common bird species in mixed forests of the Montenegrin mountains in the 19th century, especially in Piva, Tara and Bjelasica regions. This appears to be true till today. Similar to Capercaillie (Tetrao urogallus), during the 20th century ornithologists did not give much attention to the distribution of Hazel Grouse in Montenegro. This is probably due to the species' secretive habits, the need of specific techniques to find Hazel Grouse and the prevailing interest in waterbirds of the researchers of that time. Also, since 2000 records are scarce and in general limited to accidental observations of flushed birds. Individual Hazel Grouse were recorded on Durmitor (N. Stojnić, D. Radišić, unpubl. data), in the Prokletije Mountains (D. Radišić, unpubl. data), on Sjekirica Mountain near Šekular and in the Zeletin Mountains (M. Šoškić, unpubl.data). In 2010, during spring surveys in Durmitor National Park Hazel Grouse was observed 8 times, but systematic surveys of the species were not performed (Saveljić & Rubinić 2010). The species was further observed during the bird surveys in the Orjen Mountains where the population was estimated, according to the area's coverage with suitable habitat, at 35 - 70 bp (Rubinić 2016).

The species is paid more attention by hunters, although not as much attention as its larger relative, the Capercaillie, and the more commonly hunted Rock Partridge (Alectoris graeca). Hunting estimates are, however, incomplete and were therefore used for the calculation of population estimates only with caution.

Following to the species' largely unknown distribution and abundance in Montenegro, we decided to pay special attention to Hazel Grouse during fieldwork in 2017 and 2018. The majority of field surveys were carried out during September and October when older males defend their territories from younger, recently matured males. Playbacks of male song were used to

check for territorial response on specific observation points along transects in different areas, mainly in northern half of the country. Due to logistic and organizational limitations besides pre-selected localisation of transects, some transects were localised opportunistically in suitable habitats. Besides autumn surveys, a number of surveys were conducted also during spring. In all, from a total of 389 observation points at 187 males or paired Hazel Grouse were recorded. As the number of field days was very limited, we could survey only a few areas in the north of the country sufficiently, while many others especially those in S and central parts of the country could be very well or not surveyed at all. We managed to survey Durmitor, Ljubišnja, Prokletije and Cmiljevica-Mokra-Šekular pSPAs with more than 50 survey points, while Kričak (38 points) and Visitor-Zeletin (26 points) were surveyed with more than 20 observation points. Other areas were surveyed with lesser than 20 survey points or were not surveyed for the species.

Results show that Hazel Grouse is an abundant species in different forest types between 622 m a.s.l. (Moračke Mountains, close to Manastir Morača) and 2,064 m a.s.l. (Hridsko Lake, Prokletije Mountains). The species was found in almost pure broadleaf as well as in more or less pure coniferous forests, but is by far most abundant in boreal types of mixed forests and in coniferous forests with patches of broadleaf bushes, small stands of broadleaf or single broadleaf trees between 1,200 and 1,800 m a.s.l. (median 1,500 m a.s.l.). Although the data from Montenegro is still preliminary, Hazel Grouse appears not as heavily dependant on old-growth and pristine forests as Capercaillie. It is well known that the species inhabits mainly horizontally and vertically good structured forests with plenty of gaps and heavily overgrown understory. Forest edge density, shrub and herb cover, structure and development stages of forest stands are essential habitat variables in boreal forests where the species is present in Central Europe (Mathys et al. 2006). In the Bavarian Forest National Park in Germany habitat heterogeneity, tree structure, the presence of Mountain Ash Sorbus aucuparia and willows (Salix sp.), rootplates, forest aisles, and young broadleaf stands proved to be predictive habitat variables (Müller et al. 2009). Habitat conditions in Montenegrin forests that are far less intensively managed than those in C Europe, the relative inaccessibility and remoteness of many mountain forests seem to be favourable for this and other forest species. Because there seems to be an abundance of forest stands that meet the species' habitat requirements Hazel Grouse is, obviously, present in many forests in high densities. We were able to calculate population densities in the suitable habitats for four areas with sufficient data: We found 0.895 i/100 ha in Durmitor, 1.424 i/100 ha in Ljubišnja, 1.286 i/100 ha in Prokletije and 0.616 i/100 ha in Cmiljevica-Mokra-Šekular. Using the simple tools for spatial analyses in GIS we were able to estimate Hazel Grouse populations for a few selected pSPAs which provided us with basic information for a national population estimate of 3,000 to 6,000 bp. Hence, our present estimate is considerably higher than previous population estimates for Montenegro of 300-500 bp by Puzović et al. (2003) and (D. Saveljić & M. Jovićević, in prep.).

The five most important areas for Hazel Grouse in Montenegro, reaching C6 criteria for SPA designation:

- Kričak with 345 to 690 bp
- Durmitor with 290 - 580 bp
- Bjelasica with 220 - 440 bp
- Prokletije with 195 - 390 bp
- Cmiljevica-Mokra-Šekular and Visitor-Zeletin, with both areas holding an estimated population of 145 - 290 bp

@T.Mihelič

Western Capercaillie
Tetrao urogallus

CRITERIA TRIGGERED: *C6 (5 bp)*
STATUS: B
POP. MNE: 810 – 1,065 displaying males
% OF POP. IN PSPA: > 90%
N OF PSPA WITH OCCURRENCE: 13

Capercaillie is another emblematic bird species of Montenegro. In the past it was of great interest mainly for hunters, but nowadays attention for the species is growing also in the conservation community.

In the 19th century the species was considered, like Hazel Grouse, to be common throughout the mountain forests of Montenegro. Reiser & Führer (1896) mention the species namely in the Piva area, around Duga Pass between Golija and Njegoš, in the forests around Durmitor Massif, and in Vasojevićki and Kučki Kom, Crna Planina. Additionally, Reiser & Führer (1896) report very rich leks from Bjelasica in the "direction of Sandžak" and in areas bordering to Gacko (Piva). Later, through almost the whole 20th century the species was largely neglected by ornithologists in Montenegro. On the Kosovo side of the Prokletije Mountains Grubač and Puzović (1999) the estimated population was at 150-190 i. According to the same authors on the Montenegrin side Capercaillie is present on Hajla Mountain, between Kaluđerski Laz and Bukelj where lots of excrement was found in mixed forest, dominated by Macedonian Pine (Pinus peuce). But, according to local hunters the species was rare in spruce and fir forests in higher parts of the Piva Massif (Vučković&Vizi 1977).

Other, more recent records concern mostly accidental flushings of solitary birds, and information on the presence of the species obtained from sightings of feathers, trails and droppings, mainly from Prokletije, Zeletin Mountains and border areas with Serbia (D. Radišić, M. Šoškić, J. Gardović, pers. comm.).

During field research in 2017 and 2018 special attention was given to the species. As a first step a questionnaire was prepared and distributed with the help of the Ministry for Agriculture and Rural Development to hunting associations in all 16 hunting districts where the species is present. The feedback of hunters provided solid information on the distribution in the country and subsequent

field surveys were focused on the species' abundances in core concentrations of leks. Extensive surveys were organized in spring 2018 when 21 bird experts and volunteers, together with 5 members of local hunting associations surveyed a total of 28 leks or potential leks in four study areas; i.e. Piva, Durmitor, Bjelasica and Kričak. In addition, about 20 more leks and potential sites in the Prokletije Mountains, in the Cmiljevica-Mokra-Šekular area, on Ljubišnja, Visitor-Zeletin and in the Komovi area were controlled in 2017 and 2018. Due to logistical problems, following to high snow cover, inaccessibility of steep mountain sides, wrong timing, no information on the precise location of leks, the inexperience of volunteers etc., we were not able to visit all leks at the best time of the day/year: As a result the present data shows a discrepancy between the numbers of males which were counted in the field and estimated numbers of males in leks. The later numbers were estimated on the basis of information from local hunters, habitat suitability which was estimated by observers during field surveys, and tracks that were found during field visits. We suppose that, after analyses of field data with the help from GIS-based habitat models, we gained a rather good understanding of the numbers of males for the leks that we have visited and of population size in different study areas. Based on these analyses we corrected the numbers of displaying males from 136 males, counted on 35 leks, to an estimated number of around 340 males. This gives for the present data an average of 6,5 to 8,5 displaying males per lek. Although our numbers are biased towards the best known and presumably the largest leks, throughout Europe numbers above 8 or 10 males/lek are typical only for the strongest leks and demonstrate the health of the Montenegrin Capercaillie population. We estimate a total of approximately 125 leks for the country which will adding up to an overall population of 810 - 1,065 males.

The hunting of Capercaillie is forbidden in Montenegro since 1999 and poaching seems to be relatively rare (D. Saveljić, pers. comm.). Consequently, the main reasons for the healthy population of Capercaillie may be the probably good habitat conditions in combination with low disturbance and very limited hunting pressure. Main Capercaillie habitat changes from the W to the E of the country: In W parts the species mostly associated with Norway Spruce (Picea abies), Silver Fir (Abies alba), Scots (Pinus sylvestris) and Black Pine (P. nigra). Most leks are situated at a range

of altitudes between 1,400 and 1600 m a.s.l. Only a few leks were found above that altitude. Most leks in this habitat type were noted in the Piva-Bioč-Maglić area, Durmitor, Ljubišnja, Kričak, Njegoš, Golija, Štitovo, with some leks also in more central and even E Montenegro, i.e. Sinjajevina, Moračke Planine and Komovi. In the majority of leks in the E of the country the species is associated with Macedonian Pine (Pinus peuce), often mixed with Norvegian Spruce and Silver Fir and more rarely with Bosnian Pine (Pinus heldreichii). In contrast to W parts of the country leks are situated in significantly higher altitudes. In E Montenegro altitudes of most leks vary between 1,800 and 2,100 m a.s.l. Only very few leks were found below this range and none above. In E Montenegro Capercaillie were noted in the Prokletije Mountains, Visitor-Zeletin, Bjelasica and in the Cmiljevica-Mokra-Šekular area.

Finally, in the absence of serious ecological studies we arbitrary identified a number of attributes that, regardless of altitude and geographic location, are shared by all areas in which Capercaillies are present: i) the presence of extensive stands of old growth and/or pristine forests, ii) the presence of, typically very thick, old stands of European Blueberry (Vaccinium myrtillus), iii) comparably low human presence/activities. We strongly believe that these conditions have to be preserved for the protection of the country's healthy and particulary precious Capercaillie population! The same is the case for a number of other boreal bird species, i.e. Three-toed Woodpecker (Picoides tridactylus), Tengmalm's Owl (Aegolius funereus), and in a broader sense also Hazel Grouse (Bonasa bonasia) and Pygmy Owl (Glaucidium passerinum), of all of which Montenegro harbours large and viable populations.

In the following table the five most important areas for Capercaillie in which the species reach or surpass C6 criteria for SPA designation, are marked in bold.

POTENTIAL SPA	N. OF MALES		APPROXIMATE N. OF LEKS
	MIN	MAX	
Durmitor	**400**	**500**	**40**
Prokletije	**60**	**85**	**10**
Kričak	**40**	**70**	**10**
Cmiljevica-Mokra-Šekular	**45**	**60**	**8**
Piva-Bioč-Maglič	**30**	**60**	**10**
Bjelasica	40	55	6
Hajla	40	50	10
Ljubišnja	30	40	6
Visitor-Zeletin	20	40	5
Komovi	24	24	8
Sinjajevina	16	16	2
Vojnik-Bukovica	10	10	3
Moračke planine	4	4	2
outside	50	60	15
TOTAL	**810**	**1065**	**125**

@K.Kravos

Velvet Scoter
Melanitta fusca

CRITERIA TRIGGERED: *C1 (60 i), C6 (15 i)*
STATUS: M, W
POP. MNE: 100 i
% OF POP. IN PSPA:100%
N OF PSPA WITH OCCURRENCE: >3

Velvet Scoter from NW Europe and W Siberia mainly winter in W European and Scandinavian waters as well as in the Black Sea region. Hence, the species is a rather rare winter visitor in the Western Balkans (Scott & Rose 1996, IUCN 2018). As the majority of later authors, Reiser & Führer (1896) have not recorded the species in Montenegro. Obviously, the northern species was rare in the Balkans also in the past. However, recent waterbird surveys and a study of visual bird migration in the Bojana Delta suggest that the species regularly winters in considerable numbers in the S Adriatic and Ionian Sea. With a median of 100 birds, over a four-year study of the spring migration of ducks in the Bojana Delta annual numbers of migrants fluctuated between 15 and 111 i (Sackl et al. 2014, 2017). Because the origin of these birds remains unclear, it is hard to put the birds at the Montenegrin coast in a biogeographical context.

Records of this species are rare elsewhere in Montenegro. It was recorded on Krupac Lake in Nikšićko Polje and at the sea in front of the Tivat Salina, but always in very small numbers of a few individuals (CZIP database).

The only area where the species reaches SPA threshold:

- Bojana Delta with regularly around 100 migrating birds during spring migration, and with a recorded maximum of at least 111 i passing the delta in March 2013.

@B.Rubinić

Common Pochard
Aythya ferina

CRITERIA TRIGGERED: *C1 (20 bp / 60 i), C2 (8.000 i)*
STATUS: B, W
POP. MNE: B (0-5 bp), W (20.000 i)
% OF POP. IN PSPA: 100%
N OF PSPA WITH OCCURRENCE: 8

In the 19th and 20th centuries the species was not known to breed in Montenegro, but Reiser & Führer (1896) mention A. ferina as an uncommon winter visitor to Skadar Lake. Till the 1980s Common Pochard became very numerous on Skadar Lake during winter with population estimates of up to 100,000 birds! Similarly, on Slano Jezero up to 20,000 birds (9 November 1979) and on Krupac (19 September 1980) around 1,000 i were counted (Vizi & Vasić 1986). At the same time, the authors claim that there are no proofs for the breeding of the species in the country.

Recent observations during the breeding season indicate that Common Pochard may breed on Skadar Lake, but the population is small and does not exceed 5 b, probably due to disturbances by fishermen and illegal hunting (Mihelič 2017).

The recent trend of the winter population follows the species' global negative trend and has decreased dramatically on Skadar Lake during the last few decades. Skadar Lake constitutes, by far, Montenegro's most important wintering site, where with up to 40% of the total waterbird population A. ferina used to be one of the most common waterbirds. However, the wintering population currently still exceeds 1% of the species' biogeographic population in two sites: Skadar Lake and Nikšićko Polje. In addition, following to ground observations on Ada Island at least 310 – 1,960 i, with a daily maximum of 1,000 i in early March 2013, annually pass the Bojana river delta during spring migration (Sackl et al. 2014, 2017). The species further regularly reaches or even exceeds the C1 criteria with 135 i seen on Plav Lake on 3 March 2018 and 200 i in Tivat Salina during the IWC in January 2010 (IWC database).

Sites in Montenegro where the species exceeds C1 criteria and C2 criteria:

- Skadar Lake with 10,000 wintering birds in 2016 (IWC database)
- Nikšićko Polje with 9,000 wintering birds in 2017 (CZIP database)
- Bojana Delta with 1.962 individuals during the spring migration turnover in 2013 (Sackl et al. 2017)
- Ulcinj Salina regularly several hundreds and a maximum of 1,248 on 12 March 2015 (Euronatur/CZIP database)
- Tivat Salina with 200 birds, January 2010 (IWC database)
- Plav Lake with 135 birds on 3 March 2017 (CZIP database)

@C.Guzzon

@B.Rubinić

Ferruginous Duck
Aythya nyroca

CRITERIA TRIGGERED: *C1 (20 bp / 60 i), C2 (500 i), C6 (5 bp / 15 i)*
STATUS: B
POP. MNE: 50-80 bp
% OF POP. IN PSPA: 100%
N OF PSPA WITH OCCURRENCE: 6

Since Reiser & Führer (1896) Ferruginous Duck is known as a common breeding species on Skadar Lake with a few additional pairs breeding on Zogajsko Blato, today's Ulcinj Salina. Till today this duck remains more or less limited to these two sites, with Skadar Lake being the species' stronghold in Montenegro, both in terms of breeding and wintering.

With 50-80 bp the boat and kayak surveys in 2017, so far, provided the most accurate estimates of the breeding population of Ferruginous Duck on Skadar Lake. According to a few spring and summer observations in marshlands (knete) surrounding the Ulcinj Salina a small breeding population may further exist in the remains of the former Zogajsko Blato in the Bojana Delta. Hence, during the first phase of Euronatur/CZIP's Adriatic Flyway Project probably paired birds (2 bp) were seen in Kneta Ćurke in June 2003 (Schneider-Jacoby et al. 2006). Nearby, obviously, paired birds were also seen in spring 2010 (P. Sackl, unpubl.).

The wintering population is usually not high and rarely exceeds 100 i (IWC database). But numbers can be much higher. Thus, Stumberger & Schneider-Jacoby (2010) mention a record of 1,035 i (2% of the biogeographical population) on Skadar Lake, but unfortunately don't provide details of the date when this number was counted.

Like for some other ducks, the Bojana river delta appears to be an important migration corridor for the species. With daily maxima of 408 i (21 March 2013) and 668 i (13 March 2014), during spring migration annual totals of actively migrating birds on Ada Island fluctuated obetween 796 i – 1913 i (median 1424 i) (Sackl et al. 2014, 2017). Nevertheless, resting numbers of Ferruginous Ducks in the Ulcinj Salina – maximum 45 i – are surprisingly low (Euronatur/CZIP database).

Localities where Ferruginous Duck reaches tresholds for SPA designation:

- Skadar Lake with 50-80 bp, triggerring C1 and C6 criteria, and 1,035 wintering birds triggering C2 criteria
- Bojana Delta with 1,900 migrating birds, triggering C1, C2 and C6 criteria
- Ulcinj Salina with up to 45 i , triggering C6 criterion

@P.Sackl

@P.Sackl

Garganey
Spatula querquedula

CRITERIA TRIGGERED: *C3 (20.000 i)*
STATUS: M
POP. MNE: M (63.500 i)
% OF POP. IN PSPA: 100%
N OF PSPA WITH OCCURRENCE: < 8

Garganey is known as the most abundant and common migratory duck in the Bojana river delta since the end of the 19th century (Reiser & Führer 1896) and it has remained numerous in the area until modern times. Although migration flocks may, during spring migration, rest anywhere along the Montenegrin coast, the Bojana Delta (including the Ulcinj Salina) and Skadar Lake, further inland on the migration corridor along the Bojana River, are by far the most important sites for the species in Montenegro. During a study of visual bird migration on Ada Island in the Bojana Delta in spring 2010, 2013 and 2014 Garganey was the most abundant migrant. While the species represented 46% of all actively migrating birds off the delta front, annual migration volumes of Garganeys varied between 16.496 i in 2010 and 63.533 in spring 2013. During a truly spectacular mass migration on 24 and 25 March 2013 within a few hours a total of 42,180 Garganeys or 3,196 birds/hour passed Ada Island (Sackl et al. 2014, 2017).

Therefore, the only area where the species reaches SPA thresholds is:

Bojana Delta with regularly over 20,000 i (a median of 37,465 individuals) migrants during spring migration, with a recorded maximum of at least 63,533 i or 3,2% of the biogeographical population passed the area in 2013

@G.Bernard

Northern Shoveler
Spatula clypeata

CRITERIA TRIGGERED: *C3 (4.500 i)*
STATUS: M
POP. MNE: M (11.000 i)
% OF POP. IN PSPA: 100%
N OF PSPA WITH OCCURRENCE: < 8

The only two areas in Montenegro were Northern Shoveler regularly winters in larger numbers are the Ulcinj Salina and Skadar Lake. While the salina regularly hosts a winter population of several hundred birds (max. 570 i, 2010;), numbers are usually closer to 10 and over 100 i are rare on Skadar Lake (i.e. 119 i in 2011) and are usually closer to 10 only (IWC database).

However, by far more important than the wintering areas which don't reach the thresholds of SPA criteria, is the migratory corridor across the southern Adriatic Sea through the Bojana Delta (and which may lead through Skadar Lake further inland into N and E Europe). Between 2010 and 2015, annually, an absolute minimum of 6,300 – 11,000 Northern Shovelers crossed the delta in March till early April (Sackl et al. 2014, 2017). Hence, the area is visited by a minimum of 1% and up to 2,5% of the species biogeographical population.

The only site where the species reaches SPA thresholds is:

- Bojana Delta with regularly over 4.500 i (median 8.892 , 2010 - 2014) migrants in spring, recorded maximum of at least 11.033 i (i.e. 2,5% of the bio. pop.) passing the delta in 2014

@U.Paal

European Wigeon
Mareca penelope

CRITERIA TRIGGERED: *C3 (3.000 i)*
STATUS: M, W
POP. MNE: M (4.300 i), W (up to 2.800 i)
% OF POP. IN PSPA: 100%
N OF PSPA WITH OCCURRENCE: < 8

European Wigeon occurs in Montenegro only during migration and for wintering. The main wintering area of the species is the Ulcinj Salina. With minima of several hundreds of birds in "poor" winters and maxima around 2,000 birds during "good" winters, the numbers during January counts, 2004 – 2017, fluctuated between 123 i and 2549 i (median = 1065, 25% - 75% percentile = 568 - 1862) (IWC database). In addition, annually 250 - 550 birds (max. 565 i, 2014) winter in the Tivat Salina. It seems that Skadar Lake was more important for the species in the past. In January 2004 as many as 18,000 i (i.e. 6% of the biogeographic population) were counted. Yet such numbers were never recorded before or during later counts (A. Vizi, unpubl.). During the 1990s average numbers of the winter population amounted to around 500 i, while in the last years it has dropped to lesser than 50 birds (IWC database). Hence, none of the former sites reach SPA thresholds.

The only area in which numbers of European Wigeon qualifies for SPA designation is the Bojana Delta. During a three year study of visual bird migration between 2010 and 2014 in the prodelta of the Bojana River, the annual volume of spring migration of the species varied between 2,723 and 4,330 i. While the migration intensity of Eurasian Wigeon fluctuated from 9,5 i/h (2014) to 24,6 i/h in 2010, maximum numbers of up to 4,350 i in March 2010 amount to 1,4% of the biogeographical population. Because migration volumes derived from ground observations respresent minimum numbers, annually an absolute minium of 1% of the species' biogeographical population passes the Bojana Delta during spring migration (Sackl et al. 2016).

The only site were the species' reaches SPA criteria is:

- Bojana Delta with regularly over 3,000 i during spring migration, and a recorded maximum of at least 4,330 i passing the delta in March 2010

@B.Rubinić

Black-necked Grebe
Podiceps nigricollis

CRITERIA TRIGGERED: *C2 (2.100 i)*
STATUS: W
POP. MNE: 1.000 to 5.000 i
% OF POP. IN PSPA: 100%
N OF PSPA WITH OCCURRENCE: 7
(reaching SPA thresholds only in one site)

Black-necked Grebe is a non-Annex I species that breeds in low numbers on Skadar Lake. However, the highest numbers are present on Skadar Lake during the wintering period. The numbers of wintering birds fluctuate considerably from year to year from as few as 277 in 2010 to 14.000 i in 1999 (a count of 22.000 i in 1993 was probably an over-estimate). Since 2000 annual maxima of mid-winter counts in the frame of the International Waterbird Counts (IWC) range from 2.806 i 2009, 2.879 i 2008, 3.843 i 2005, and 5.000 I in 2004 (IWC database). High numbers are also recorded on the Albanian side of the lake (B. Rubinić, unpubl.), suggesting that at times when low numbers are recorded in Montenegro, the birds could have been shifted into the Albanian part. Since these records result from one-time-per-winter counting effort (IWC) the seasonal dynamics and daily movements of the birds are not known. However, the high numbers in some winters indicate that the wintering population may regularly reach and surpass 1% of the biogeographical population of the species.

The only site where this species triggers SPA criteria is therefore:

- Skadar Lake with up to 5.000 wintering i or 2,4% of the biogeographical population

@P.Sackl

Greater Flamingo
Phoenicopterus roseus

CRITERIA TRIGGERED: *C6 (5 bp / 15 i), C2 (600 i)*
STATUS: R
POP. MNE: max. 2.500 i
% OF POP. IN PSPA: 100%
N OF PSPA WITH OCCURRENCE: 1

Until the recent establishment of a year-round population in the Ulcinj Salina, Greater Flamingo was a very rare species in Montenegro. Before 2010 only a handful sightings of single birds or small flocks are known for the salina, although the area is regularly visited by ornithologists and bird-watchers. For the first time, in autumn 2010, a flock of up to 100 i was present in the area. With maxima of up to 1,400 and 2,100 birds, the numbers of flamingos which use the salina for feeding and roosting, increased dramatically between 2011 and 2014 (Euronatur/CZIP, unpubl.). A first breeding attempt in 2013 of approximately 175 bp was destroyed by egg robbers, while later attempts failed because of spring floodings, poor water management and the influx of freshwater after the abandonment of salt production (Sovinc et al. 2017, Sackl et al., in press). Smaller flocks of Greater Flamingo were recently seen in the Tivat Salina, but the occurrence of the species in all other sites in Montenegro is more or less accidental.

Therefore, the only site where the species reaches SPA criteria and with 4% population numbers surpassing the 1% threshold of its biogeographical population is:

- Ulcinj Salina with regularly over 700 birds, and a maximum of 2,100 i in 2014

@M.Jovićević

European Turtle Dove
Streptopelia turtur

CRITERIA TRIGGERED: *C1 (20 bp)*
STATUS: B
POP. MNE: 2,300 to 4,600 bp
% OF POP. IN PSPA: 50%
N OF PSPA WITH OCCURRENCE: 18

European Turtle Dove is a typical and relatively common species in most of the Mediterranen and sub-Mediterranen regions of Montenegro. At the end of the 19th century Reiser & Führer (1896) noted single pairs all over the country, while the species was most numerous along the Zeta River and in Komani (Sitnica River). Turtle Dove was also common around Rijeka Crnojevića, in the Ulcinj area and around Malo Blato on Skadar Lake (Reiser & Führer 1896). More than hundred years later the distribution of European Turtle Dove remains more or less the same. The species has declined over the past few decades in most of its range and has been therefore listed as Vulnerable on the IUCN Global Red List (BirdLife International 2017). In Montenegro the current population trend is not known.

During field work for SPA identification European Turtle Dove was found breeding in different areas of Montenegro from -3 m a.s.l. in the cryptodepression of Skadar Lake to 826 m a.s.l. near the village Tupan in the Bratonožići area. According to data collected during surveys of other species in 2017 and 2018, the species lives in river valleys, in lowlands along the shores of Skadar Lake and at the Adriatic coast, and in traditional farmlands with mosaics of hedges, pastures, small-scale arable lands and orchards in sub-Mediterranean region in the west of the country. The core breeding areas are concentrated in the warm climates of the lowlands of southern and south-central Montenegro, basically in the area around Podgorica and Skadar Lake, in Zeta river valley and Bjelopavlići, the lower slopes of the Rumija Mountains, in the Morača and Cijevna river valleys, in Kuči and the outskirts of Podgorica town. In addition, a significant population inhabits the Montenegrin and Albanian side of the Bojana river delta. In this area 157 bp were counted in 2004 (Schneider-Jacoby et al. 2006). At present the breeding population in the Montenegrin part of the delta is estimated at 75 to 150 bp. It seems that the population in this area is at least stable or may have even increased locally. According to partial counts in the Ulcinj Salina, in 2017 and 2018, and along the outer canal of the salina the area holds a minimum of 8 – 10 bp. Together with an estimated minimum of 10 bp in a transect along Velika Plaža (Ulcinj – Mala Bojana) current numbers are comparable to those in the early 2000s

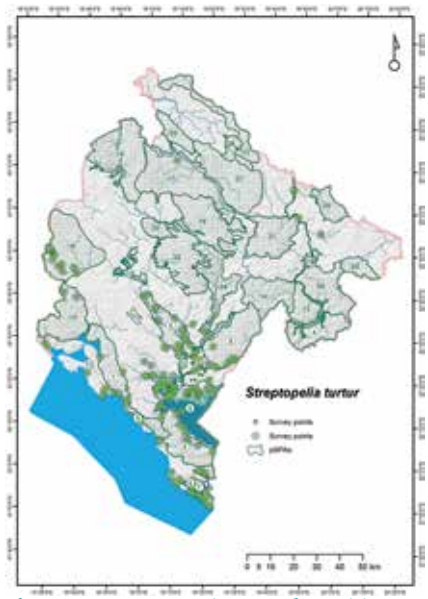


Figure 7: Survey points and positive records of the surveyed European Turtle Dove Streptopelia turtur in 2017 and 2018.

(Schneider-Jacoby et al. 2006; Euronatur/CZIP database). The species is further relatively common in the W of the country (Bratonožići pSPA, lower parts of Orjen Mountain pSPA), but since the suitable habitats for the species are restricted to small areas of farmlands, the population is presumably not large in these parts of the country.

According to existing law European Turtle Dove is still legally hunted in Montenegro. Although overall hunting pressure is considered to be comparably high in the country, turtle dove is not a popular quarry and most hunters show little attention for the species (e.g., B. Nikćević pers. comm.). Nevertheless, the species' global conservation status calls for an immediate hunting ban!

We estimate that around 50%, i.e. 975 – 1,949 bp out of a total population of 2,300 – 4,600 bp, of the current breeding population nest within the boundaries of potential SPAs. Although the species is quite widely distributed in Montenegro, core areas with particularly high breeding densities qualify for SPA identification. By the threshold conservatively at a lower level of 20 bp we identified, according to current population estimates, 2017 – 2018, 12 pSPAs reach C1 thresholds. These areas which will be very significant for the long-term survival of the species in Montenegro, are shown in the table in bold:

POTENTIAL SPA	MIN	MAX
Skadar Lake	164	329
Bjelopavlići	162	323
Rumija	158	316
Kuči, Cijevna	100	199
Kanjon Morače	87	174
Delta Bojane	75	150
Orjen	46	92
Podgorica	45	90
Paštrovići	39	78
Bratogošt	23	47
Piva, Bioč, Maglić	23	46
Lim i dolina Plava	23	45
Ulcinj salina	10	20
Ćemovsko polje	4	8
Buljarica	2	3
Valdanos	1	3
Visitor, Zeletin	1	1
Tivatska solila	0	1
TOTAL pSPA	975	1.949
TOTAL Montenegro	**2.300**	**4.600**

@T.Mihelič

Corncrake

Crex crex

CRITERIA TRIGGERED: *C6 (5 bp)*
STATUS: B
POP. MNE: 100-120
% OF POP. IN PSPA: 50%
N OF PSPA WITH OCCURRENCE: 9

At the southern limits of its distribution Corncrake, presumably, never was a common breeding bird in Montenegro. During early ornithological research in the 19th century it was only reported for wet meadows in Lipovo, near Kolašin, nearby Vratlo Pass in Sinjajevina Mountain, for the meadows SE of Žabljak and with a few pairs also in wet meadows in Zeta, N of Skadar Lake (Reiser & Führer 1896).

Subsequent records are very scarce. Two accidental records concern two singing males which were heard in Podgora village on Durmitor on 15 July 2007 and another singing male in Šćepan Polje on 25 May 2008 (N. Stojnić, unpubl.).

In 2017 and 2018 limited resources prevented us to conduct thorough surveys for the species, but we checked a few areas with habitats suitable for the species. Consequently Corncrakes were found in 9 pSPAs. Besides the areas listed below in which C6 criteria trigger SPA identification, 2-3 calling males were recorded on Durmitor, < 5 males in Sinjajevina Mountain, a few in the Piva-Bioč-Maglić area, two in Nikšićko Polje, and a single calling male in Hajla.

Corncrake numbers met C6 criteria in the following areas:

- Mataguži with 20-25 calling males
- Lim Valley and Plavsko Lake with 20-25 calling males
- Moračke Mountains with 10-15 calling males
- Vojnik Mountain and Bukovica Valley with 5-7 calling males

@T.Qaneer

Baillon's Crake
Zapornia pusilla

CRITERIA TRIGGERED: *C6 (5 bp)*
STATUS: B
POP. MNE: 0-70 bp
% OF POP. IN PSPA: 100%
N OF PSPA WITH OCCURRENCE: 1

Baillon's Crake is one of most secretive bird species. Following to its mainly nocturnal habits the species is extremely hard to observe.

The only record before 2003, when species was discovered in marshlands along Velika Plaža in the Bojana Delta, is a badly damaged corpse of a Zapornia crake which was brought to Ludwig von Führer by his dog while hunting in Humsko Blato on Skadar Lake on 10 June 1894. Due to the poor condition of the corpse the bird could not be identified with certainty either as Baillon's (Z. pusilla) or Little Crake (Z. parva). But the specimen showed a large brooding spot which means that the bird had incubated on Skadar Lake at the time of the find (Reiser & Führer 1896). The only time Baillon's Crake was again recorded on Skadar Lake was on 7 May 2011, when a male was heard singing with two types of song in a marsh next to a small tributary to the Skadar Lake close to Rijeka Crnojevića, in the NW corner of the lake (Ernst 2011). Although there is absence of other recent records for both species on Skadar Lake these two records give hope that there could be an overlooked population of one or both of these species on Skadar Lake. But, so far, an extensive effort was never made to verify this assumption and is left for the future.

In the evening of 26 and 27 April 2003 by using the playback method, 51 birds were recorded along a short stretch of brackish wetlands in the hinterlands of Velika Plaža, Ulcinj, in the Bojana Delta. On both evenings the birds were very vocal, while during later visits in early May only 4 birds responded to playbacks and none in mid-June of the same year. In Ulcinj the species was found in brackish marshes covered by dense stands of emergent vegetation of Phragmites australis, Typha angustifolia, Cladium mariscus, Juncus acutus and Schoenus nigricans, interspersed by higher sand dunes, pans filled by deeper water and fragmented stands of younger pine forest. In addition, on the same occasion another bird was heard on nearby Ada Island and three more in Kodra-Štoj (Knete) close to the Ulcinj Salina (Schneider-Jacoby et al. 2006).

The species' presence in the area was confirmed by Seifert et al. (2015) who caught 1 adult individual for genetic sampling on 26th April 2010. In contrast, during two further systematic searches since since 2003, the last time in 2018, no evidence for breeding was found. Experience shows that the calling intensity of crakes of the genus Zapornia fluctuates between years (e.g., Vukelič & Prelovšek 2002, Rubinić et al. 2005, P. Kmecl, pers.comm.), while the birds normally reduce calling activity after pair formation and with the beginning of incubation (Cramp 1980). The studies of the species' ecology in its wintering area in the Senegal Delta show that birds prefer edge structures, like the trampling paths of people and domestic animals, edges along open water bodies and the boundaries between different vegetation types, irrespective of the species composition of vegetation (Seifert et al. 2018).

The main concern for habitat suitability in the Bojana Delta that was already raised by the authors of the first assessment of the area's conservation values in 2003 (Schneider-Jacoby et al. 2006), is the degradation and further fragmentation of wetland habitats along Velika Plaža. The population estimate of 55-70 bp by Schneider-Jacoby et al. (2006) represents a significant portion of the species' population on the Balkan Peninsular and of the European population, recently estimated by BirdLife International (2017) at 980 – 1,400 males. However, more research is needed to verify the species occurrence in the Bojana Delta.

For the moment the species is assessed as a possible breeder for one pSPA:

- Bojana Delta with 0-70 calling males, arguably reaching C6 criteria

Baillon's Crake habitat in Bojana Delta pSPA, @M.Jovićević

@M.Šoškić

Common Coot
Fulica atra

CRITERIA TRIGGERED: *C3 (25.000 i)*
STATUS: W
POP. MNE: ca. 30.000i – 170.000i wintering
% OF POP. IN PSPA: 100%
N OF PSPA WITH OCCURRENCE: 12

Common Coot is one of the most common and most abundant species of waterbirds in Montenegro. It is present on all lakes, estuaries, saltpans and lagoons, sometimes even on smaller alpine lakes and on calmer and wider sections of major Montenegrin rivers, i.e. Morača, Tara, Lim and Piva. The Common Coot is more abundant in Montenegro as a wintering bird, but the breeding of species was also recorded on major water bodies (e.g. Vasić et al. 1990, Saveljić 2008b, Vučković & Vizi 1977, Vizi 2018, Sackl et al. 2017 etc.).

By far the most important site for Common Coot in Montenegro is Skadar Lake. Coots are by far the most dominant waterbird species among wintering waterbirds on Skadar Lake and their share in overall number represents between 70% and 85% (IWC database). The absolute numbers of wintering Common Coots on Skadar Lake vary in different years and are probably a reflection of natural conditions (severity of winter, snow cover in continental parts of Central and Eastern Europe etc.) and general population trends of this species. The absolute numbers of wintering Common Coots, counted on Skadar Lake during the January IWC surveys fluctuate between 13.849i (2014) and 160.000i (1998 and 1999). The median number of wintering Common Coots on Skadar Lake in a period of 1991 to 2016 was 60.856i (IWC Database). There is no other site in Montenegro where the numbers of wintering Coots would surpass the C3 SPA criteria of 1% of the biogeographical threshold (25.000i). The second most important area for the species is Nikšićko polje where Common Coots winter on Krupac or Slano Lakes (a system of Nikšić artificial water reservoirs), depending on weather (ice) conditions. The number of wintering coots in Nikšićko polje reaches up to 11.150i, in 2016 (IWC Database). Due to the deterioration of the system of salt pans infrastructure (dykes, water pumps, channels etc.) in Ulcinj Salina the general character of the site is changing from saline to lagoon ecosystem and as a result a number

of some species of ducks and Common Coots are increasing (Sovinc et al. 2017). The numbers of wintering Common Coots in recent winters are therefore between 5.000 and 7.000 individuals; max. 7.640i in 2015 (IWC Database). Up to 780i winter also in Tivat Salina, and up to 640i on Plav Lake, while everywhere else in the country the species is far less numerous (IWC Database).

The only site where the species reaches the C3 criteria for SPA selection is therefore:
- Skadar Lake with a median of 60.856i in the period 1991 to 2016 presenting 2,4% of the biog. pop. and a maximum of 160.000i representing 6,4% of the biogeographical population of the species

@M.Kose

@B.Rubinić

Common Crane
Grus grus

CRITERIA TRIGGERED: *C2 (800 i), C5 (3.000 i), C6 (15 i)*
STATUS: M
POP. MNE: >4.000 i during migration
% OF POP. IN PSPA: >90%
N OF PSPA WITH OCCURRENCE: 6 (stop-over sites)

Common Cranes cross Montenegro mainly during spring migration between mid-February and early April. In contrast, the numbers of migrants are much smaller in autumn. Although Montenegro is situated in the center of the Adriatic Flyway, the majority of the cranes use a more northern route that leads from N Africa across S and C Italy and the Adriatic Sea to the S Dalmatian coast in Croatia and further inland to regularly use stop-over sites in the karst poljes of W Bosnia and Herzegovina (Stumberger & Schneider-Jacoby 2010). In all, about 80% of the birds which belong of the E Mediterranean biogeographic population (> 60,000 i) use this central Adriatic route N of Montenegro. Anyway, a smaller portion of the population follows a more southern route across the S Adriatic Sea and the Montenegrin mountains (Stumberger & Schneider-Jacoby 2010).

Earlier observations by Reiser & Führer (1896) comply with more focused censuses of migration flocks over the last years. However, an overall picture of total crane numbers which cross the country and a complete list of sites that the birds frequent for stopping-over and resting during migration, is still missing.

Between 28 February and 23 March 2013, in all, 944 migrants were counted in a potential bottleneck area following the Zeta River in Bjelopavlići on route from Podgorica – Danilovgrad – Nikšić (Topić et al. 2015). An incomplete but systematic survey of crane migration for the whole country was organized between 27 February and 25 April 2018. With an overall total of 4,065 birds, the results confirm the importance of Bjelopavlići valley and Nikšićko Polje which have been proposed as pSPAs, for crane migration. Meadows and the banks of artificial lakes are regularly

used for stopping-over and resting in Nikšićko Polje, while the Bjelopavlići Valley is only used as a migratory corridor. The only two other sites in Montenegro which are regularly used by cranes during migration are the Ulcinj and Tivat Salinas. Other sites, like the Morača river valley, Tara valley, Velje Brdo, Ćemovsko polje etc. (D. Saveljić, O. & A. Vizi, pers. comm.), are accidentally used and do not function as regular stop-over sites. For a better understanding of the importance of other areas for crane migration and the role of other potential bottle-necks we recommend the establishment of a comprehensive monitoring scheme of migration.

Following to current knowledge SPA identification is triggered by different criteria for the following areas:

- Nikšićko Polje with regularly hundreds (i.e., 500 i, 3 March 2018) resting during spring migration triggering at least C6 and by concerning the turnover of individuals most probably also C2 criterion; C5 criterion is triggered by 4,065 birds crossing the polje during spring migration 2018
- Ulcinj Salina with regularly several hundreds of birds crossing, rarely stoping on Velika Plaža and the salina (max. 632 I, 12 March 2015; Euronatur/CZIP databaseSackl unpbl.) triggering C6 criterion
- Tivat Salina with regularly tens of resting birds in spring (max. 140 i, 2 March 2018; CZIP database)
- Bjelopavlići Valley, C5 criterion is triggered by 4,065 birds crossing the area during spring migration 2018

@K.Kravos

Red-thoated Diver
Gavia stellata

CRITERIA TRIGGERED: *C2 (100 i), C6 (15 i)*
STATUS: W
POP. MNE: 100-110 i
% OF POP. IN PSPA: 100%
N OF PSPA WITH OCCURRENCE: 1

Recent data collected in the framework of a four-year study on visual bird migration of birds at the mouth of the Bojana River indicate that Red-throated Diver is regularly wintering in the Bojana delta area. This is probably the only site in Montenegro where the species regularly occurs. The population estimate for this area is between 100 and 110 individuals, with 106 i recorded in 2010 and 98 in 2014 (Sackl et al. 2017). Since the counting of actually migrating waterbirds has been performed during March till mid-April it is not completely clear whether the birds spend the whole winter here or whether they congregate off the delta front during spring migration. Yet numbers recorded during IWC mid-winter counts indicate that at least several tens spend the whole winter in the area, while the numbers are probably higher during pre-breeding migration congregations, reaching tresholds of 1% of the biogeographical population (100 i). In other areas in Montenegro the species is only an accidental visitor.

The single site where the species triggers SPA criteria is:

- Bojana Delta with up to 110 wintering and migrating birds

@U.Paal

Scopoli's Shearwater
Calonectris diomedea

CRITERIA TRIGGERED: *N/A, potentially C6 (15 i)*
STATUS: M
POP. MNE: ca. max. 22 i
% OF POP. IN PSPA: 100%
N OF PSPA WITH OCCURRENCE: 1

So far Scopoli's Shearwater has been recorded only a few times in Montenegro, with all observations in the Bojana Delta. A maximum number of 22 i was observed in the framework of the present project on 10th October 2018. Regardless of the absence of relevant data we believe that the species is a regular visitor of the inshore waters of Montenegro, because the species is known to migrate annually along the coasts of the Adriatic and Ionnian Sea (Stipčević & Lukač 2001). Furthermore, the nearest breeding colonies exist on the Dalmatian islands in Croatia - ca. 120 km distant 700-1.200 pairs on Lastovo and Pučinski Island (Bioportal 2018) and in ca. 220 km distance the species nests on the islands of the Ionnian Sea in Greece (BirdLife International 2018). By implementing a monitoring scheme of seabird migration, we can expect a significant increase of the data on the present and other semi-pelagic seabirds, like Yelkouan Shearwater Puffinus yelkouan, Audouin's Gull Larus audouinii, Slender-billed Gull Larus genei etc. Following to the recent records in the Bojana Delta, food availability and habitat characteristics of the area, the possibility is relatively high that the species occurrs regularly in the delta. Until no further data is available, the species is only an addition to the list of Annex I species for the site but does not qualify as a SPA criteria species.

The single site where this species might arguably trigger SPA criteria in Montenegro is:

- Bojana Delta with up to 22 registered i during the migration period

@P.Sackl

Eurasian Spoonbill
Platalea leucorodia

CRITERIA TRIGGERED: *C6 (5 bp / 15 i)*
STATUS: B
POP. MNE: 16-35 bp
% OF POP. IN PSPA: 100%
N OF PSPA WITH OCCURRENCE: 4

Eurasian Spoonbill is a rare breeding bird in Montenegro, with nesting currently confined to a single breeding place.

The species was already in the 19th century rare in the country. According to Reiser & Führer (1896) spoonbills were said to nest in Govedji brod (wrongly refered to as situated in the NE part of Skadar Lake). Not only was Govedij brod not part of Montenegro at that time, but was also "so hard to reach, that nobody has ever visited it ..." (translated from Reiser & Führer 1896).

Spoonbills are no longer nesting on Skadar Lake. Vasić (1979) found a big breeding colony on Šasko Lake and a smaller on Ada Island along the left arm of the Bojana River. Both breeding sites were checked regularly and existed from at least 1969 to 1976 (Vasić 1979). Later, between 1976 and 2003 no ornithologists visited the colonies to check their further existence. Over the same period, i.e. more precisely between 1972 and 1975, large flocks of up to 300 birds were presenting the Ulcinj Salina during May, June and July (Vasić 1979). Most probably the salina functioned during the 1970s, like today, as one of the main feeding areas for the breeding birds from the nearby colonies along Bojana River and on Šasko Lake.

Since 2003 Eurasian Spoonbill nested regularly in the mixed-species heronry on Paratuk Island. Following to the inaccessibility of the island at the Albanian-Montenegrin border reliable counts are difficult. However, between 2003 and 2017 numbers fluctuated heavily following to disturbances from bird shooting, boat traffic and sheer vandalism, and the collapse of nesting trees between 5 bp up to a maximum of 33 bp in 2007 (Fig. 1). Since 2015 after the total collapse of old willow trees on Paratuk Island which were formerly used for nesting, breeding gradually shifted to the nearby heronry in Sv. Nikola. The new colony is situated in flooded woodland and hardly accessible. Therefore, breeding numbers in Sv. Nikola are unknown. According to the numbers

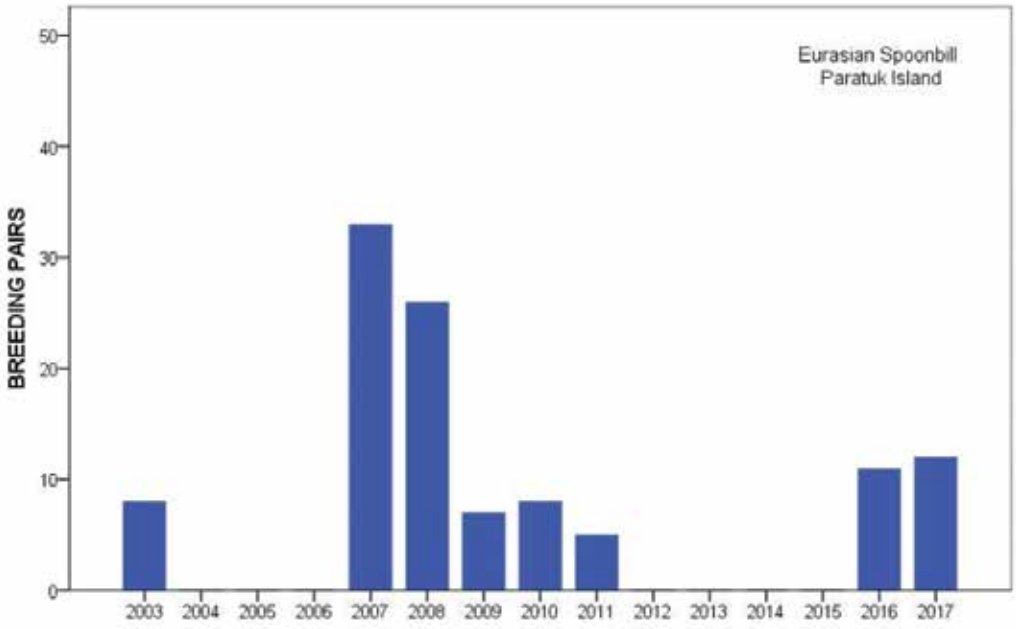


Figure 8: Breeding numbers of Eurasian Spoonbill Platalea leucorodia on Paratuk Island. No data are available for the years 2004 – 2006 and from 2012 – 2016.

of birds which enter the colony in mid- to late June, the size of the breeding population may be similar to former numbers on Paratuk Island.

Birds from this colony and migrating birds are regularly present in the Ulcinj Salina, where during migration usually smaller and larger flocks of up to 50 - 150 birds are present. In March 2010 a maximal flock size of at least 237 i was noted in the salina. Because this number concerns only birds in Jezero 1 and 2, the real number for the whole salina for the same day, with good Spoonbill migration on Ada Island and along the Bojana River, should be much higher (P. Sackl, unpubl.)

The only two sites where population numbers of Eurasian Spoonbill trigger criteria for SPA designationare:

- Bojana Delta with a maxima up to 33 bp
- Ulcinj Salina regularly several tens feeding and resting birds (mostly between 50 - 100 i); maximum 237 i on 15 March 2010 (P. Sackl, unpubl.)

@P.Sackl

Glossy Ibis
Plegadis falcinellus

CRITERIA TRIGGERED: *C6 (5 bp / 15 i)*
STATUS: B
POP. MNE: 60-80 bp
% OF POP. IN PSPA: 100%
N OF PSPA WITH OCCURRENCE: 4

Glossy Ibis was not known as a breeding bird in Montenegro until 1969. Vasić (1979) observed a few nesting pairs in a large mixed-species heronry which has been discovered on Šasko Lake. One of the reasons for the late discovery of Glossy Ibis as a breeding bird in Montenegro may be that during the Turkish Empire Crni Žar and Pančeva Oka, the most important parts of Skadar Lake for colonial waterbirds, belonged to Albanian territory and not Montenegro. Therefore the researchers of the 19th century refer to the species only as a probable breeder on the Montenegrin side of the lake (Reiser & Führer 1896). Hence, the species was not recorded as a breeding bird on Skadar Lake until very recently. However, in 2017 breeding numbers in a mixed-species heronry in Crni Žar, NE part of Skadar Lake, was estimated at 60 to 80 bp, far more than a handful of nesting pairs which were in former years thought to breed in the area (Mihelič 2017, Vizi 2018).

Currently the species may further breed in a newly established heronry in Sv. Nikola in the Bojana Delta. Here for example, 40 birds were observed circling above the heronry and, finally, 3 of them landed in the heronry on 16th June 2016 (P. Sackl & B. Zeković, unpubl.). During Euronatur's Adriatic Flyway Project the species was further seen in the heronry on Paratuk Island in April 2003, while during summer small feeding flocks with maxima of up to 40 i (2016 – 2018) are regularly present in the Ulcinj Salina and in adjoining marshlands (P. Sackl, M. Šoškić & B. Zeković, unpubl.). However, following to the inaccessibility of Paratuk Island and the new heronry in Sv. Nikola, until now the nesting of the species could not be confirmed in both sites.

Like herons and egrets, also Glossy Ibis no longer breeds on Šasko Lake and on Ada-Bojana Island. A fairly large colony was found on Šasko Lake and a few pairs have bred together with other herons and egrets in a mixed-species colony at the left arm of the Bojana Ada Island in 1960s

and 70s (Vasić 1979). The fate of both colonies is however not mentioned by later authors, and in 2003 no evidence for the nesting of Glossy Ibis in a small heronry on Ada Island were found (Schneider-Jacoby et al. 2006).

During migration and post-breeding dispersal, larger resting and feeding flocks of Glossy Ibis can be regularly observed in the Ulcinj Salina and on the lower Morača River (Doljani).

Areas which trigger SPA nomination:

- Skadar Lake with 60-80 bp
- Bojana Delta with (probably) a few bp, but regularly over 15 feeding and resting individuals
- Ulcinj Salina with regularly several tens of feeding and resting birds and a maximum of 181 i on 12 April 2014 (P. Sackl, unpubl.)
- Podgorica and Lower Morača River regularly more than 15 i feeding and resting in the Doljani area during postbreeding dispersal/migration

@P.Sackl

@P.Sackl

Eurasian Bittern
Botaurus stellaris

CRITERIA TRIGGERED: *C6 (5 bp, 15 i)*
STATUS: B
POP. MNE: 25-40 bp
% OF POP. IN PSPA: 100%
N OF PSPA WITH OCCURRENCE: 2

So far territorial behaviour, i.e. booming males of Great Bittern, has been recorded only on Skadar Lake and in the Ulcinj Salina, and its immediate surroundings. Observations and other records of the secretive species are scarce. Hence, the size of the breeding population on Skadar Lake is practically unknown. Also historically Reiser & Führer (1896) found the species only in the same sites, i.e. on Skadar Lake and in the Ulcinj area (Reiser & Führer 1896). In addition to the latter, Lodge (1908) heard a booming male at the lower Bojana River (cf. also Vasić 1979). In 2003 and from 2016 - 2017 at least one booming male was present in the Ulcinj Salina, while an additional male was heard in adjoining marshlands (Sackl et al. 2019). Besides breeding evidence the species is known to winter in Kneta Curke and the Ulcinj Saina (IWC).

Some surveys of the species have been performed in Crni žar and Pjavnik areas and there is indication of significant number of breeding Eurasian Bitterns at least in this part of the lake: i.e. 10-15 booming males in 2016 and 2017 (N. Vešivić Dubak), yet more systematic surveys would need to be performed in the future.

The single site where this species triggers SPA criteria is:

- Skadar Lake with arguably 25-40 bp

@M.Kose

Common Little Bittern
Ixobrychus minutus

CRITERIA TRIGGERED: *C6 (5 bp, 15 i)*
STATUS: B
POP. MNE: 40-80 bp
% OF POP. IN PSPA: 100%
N OF PSPA WITH OCCURRENCE: 5

Similarly to the previous species the distribution and population size of Little Bittern in Montenegro is little known. The species is more or less confined to reed beds (mainly of Phragmites australis), a habitat type which exists only in a few places in the country. Consequently, in historic times nesting was confirmed only for Skadar Lake (Reiser & Führer 1896). Here, between 5 and 20 June 1973, Vizi & Vasić (1986) found four nests close to the Zeta train station.

The Skadar Lake population is currently estimated at 40 - 80 bp, but thorough surveys were never carried out. During four kayak transects that were performed at the lake's northern shores between Plavnica and Pothum in May 2017, 7 i (6 males, 1 female) were recorded by Mihelič et al. (2017). Similarly, 9 records following to EOAC criteria indicating possible breeding of calling males and flushed adult birds, were noted in the same area during boat surveys for the present project between 21 and 26 May 2018. Our data and a few additional records indicate that this part of the lake is a core nesting area of Little Bittern on Skadar Lake, while only a few accidental sightings from the western part of the lake exist. Most probably, more focused surveys in the area and on Malo blato will reveal further breeding sites.

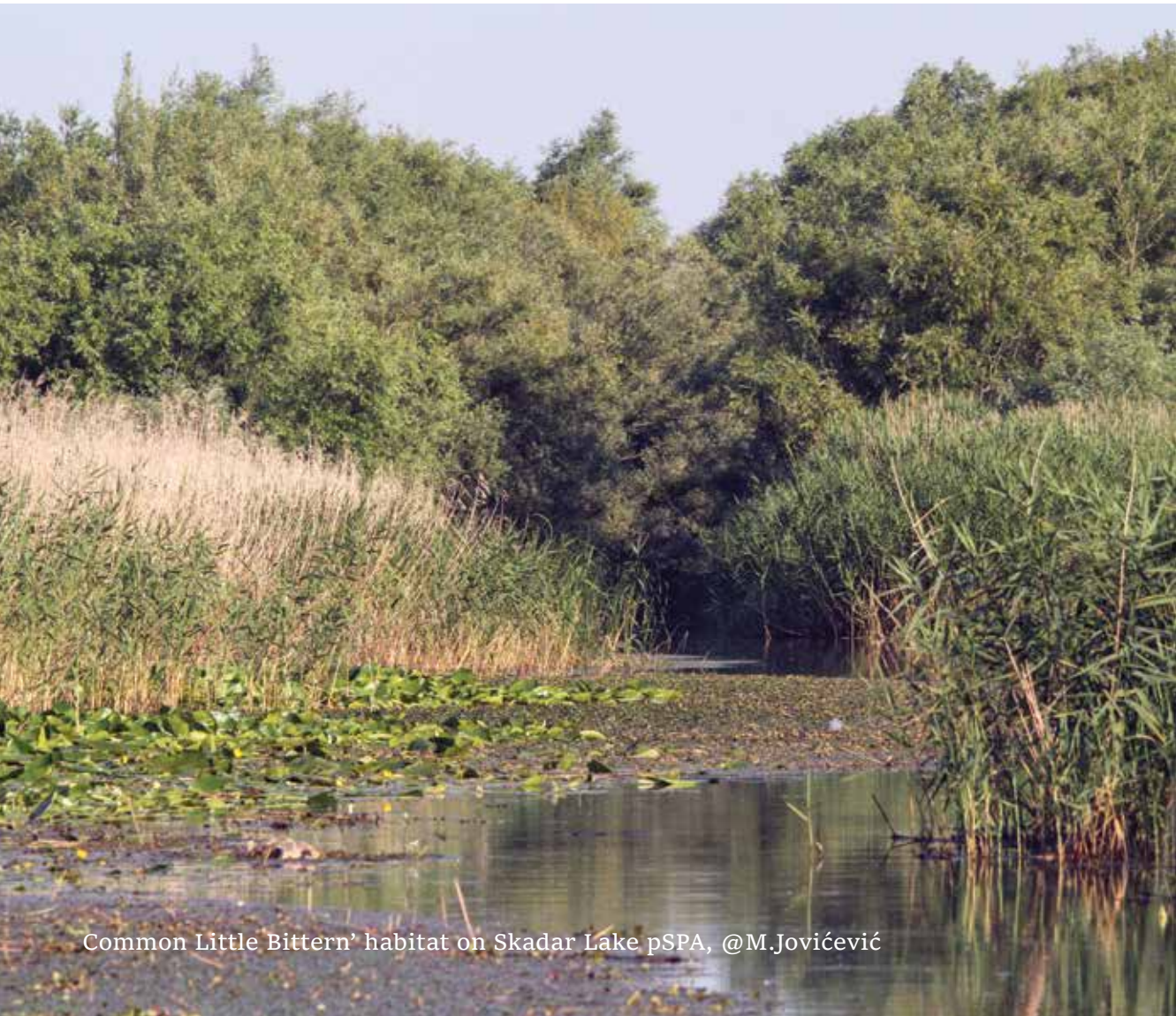
Outside Skadar Lake, during the nesting season, Little Bittern has been confirmed only on Plavsko Lake (2 birds, 1 May 2017) and in Buljarica (D. Neron, 17 June 2016, www.eBird.org, L. Bregman & O. van Herwaarden 12th July 2014, www.observado.com). However, data for both sites are too scarce to estimate population numbers. Additionally, a male was observed in the Ulcinj Salina in June 2016 (Schwarz & Sackl 2016, Sackl et al. 2017), while during the breeding bird survey in June 2018, at least 3 males and a further potential bp were present in the salina and the surrounding canal. A few days later the same Euronatur/CZIP team found another 2 - 3 territorial males in the marshlands behind Velika Plaža (unpubl. data). Hence, current observations

support the assumption by Schneider-Jacoby et al. (2006) who estimated a total of 5 – 20 bp for the Bojana Delta that the area may constitute an important breeding location for the species. Other potential breeding sites may exist in extensive reed-beds and in smaller wetland habitats, namely along the Zeta and Sitnica rivers, on Šasko Lake, in the Buljarica marshlands, in Tivatska Solila and on Slano Lake in Nikšićko Polje.

During migration the species was seen in other smaller wetlands: e.g., 8 i were seen on an artificial lake in Grbalj, Mrčevo Polje, near Budva on 2 May 2016 (M. Šoškić, unpubl.). Regular observations during migration are further known from the Bojana Delta (Schneider-Jacoby et al. 2006; unpubl. observations).

Sites for which Little Bittern qualifiesfor SPA identification:

- Skadar Lake with 40 - 80 bp
- Bojana Delta with arguably 5-20 bp and regularly more than 15 i occurring during spring migration (max 81 I (Schneider-Jacoby et al. 2006)
- Arguably Plavsko Lake with a breeding population estimated at 2 - 5 bp



Common Little Bittern' habitat on Skadar Lake pSPA, @M.Jovićević

@P.Sackl

Black-crowned Night Heron
Nyctycorax nyctycorax

CRITERIA TRIGGERED: *C6 (5 bp, 15 i)*
STATUS: B
POP. MNE: 58-67 bp
% OF POP. IN PSPA: 100%
N OF PSPA WITH OCCURRENCE: 7

Like all herons (Ardeidae) Black-crowned Night Heron breeds in Montenegro only in a handful of sites. Historic records by O. Reiser and L. von Führer refer to the only known breeding place under the Turkish Empire in Crni žar on Skadar Lake. Reiser & Führer (1896) wrongly named the site Govedji Brod which actually refers to a toponyme close to Virpazar, while under Turkish rule Crni Žar belonged to the Albanian part of Skadar Lake.

A large colony of about 100 i was recorded on Šasko Lake between 1969 and 1976 (Vasić 1979). Later this colony was abandoned. Currently, the largest breeding colony in Montenegro is most probably the one in the Bojana Delta. During the 2000s, a mixed-species colony of Black-crowned Night Heron, Little Egret, Pygmy Cormorant, Squacco Heron and Eurasian Spoonbill was situated on Paratuk Island in the Bojana River which over the last years has shifted further inland into a hardly accessible riverine forest at the eastern end of Štoj. Between 2007 and 2009 breeding numbers were estimated at 35 - 39 bp. Since 2016 a maximum of 10 bp were counted on Paratuk Island (Fig. 2). At the same time the new breeding colony in Sv. Nikola harbours approximately the same number (Euronatur/CZIP, unpubl.).

In addition, during research for the present project a small breeding colony of at least 8 bp was found in Bjelopavlići, on the banks of the Zeta River close to the village of Viš which constitutes the third currently known breeding place of the species in the country.

Away from the nesting sites already mentioned Black-crowned Night Herons occur regularly during post-breeding movements. The most important sites during late summer dispersal and migration are the Ulcinj Salina and the lower Morača River. Furthermore, a number of other, undiscovered and smaller breeding colonies may exist in riverine forests along the Morača and

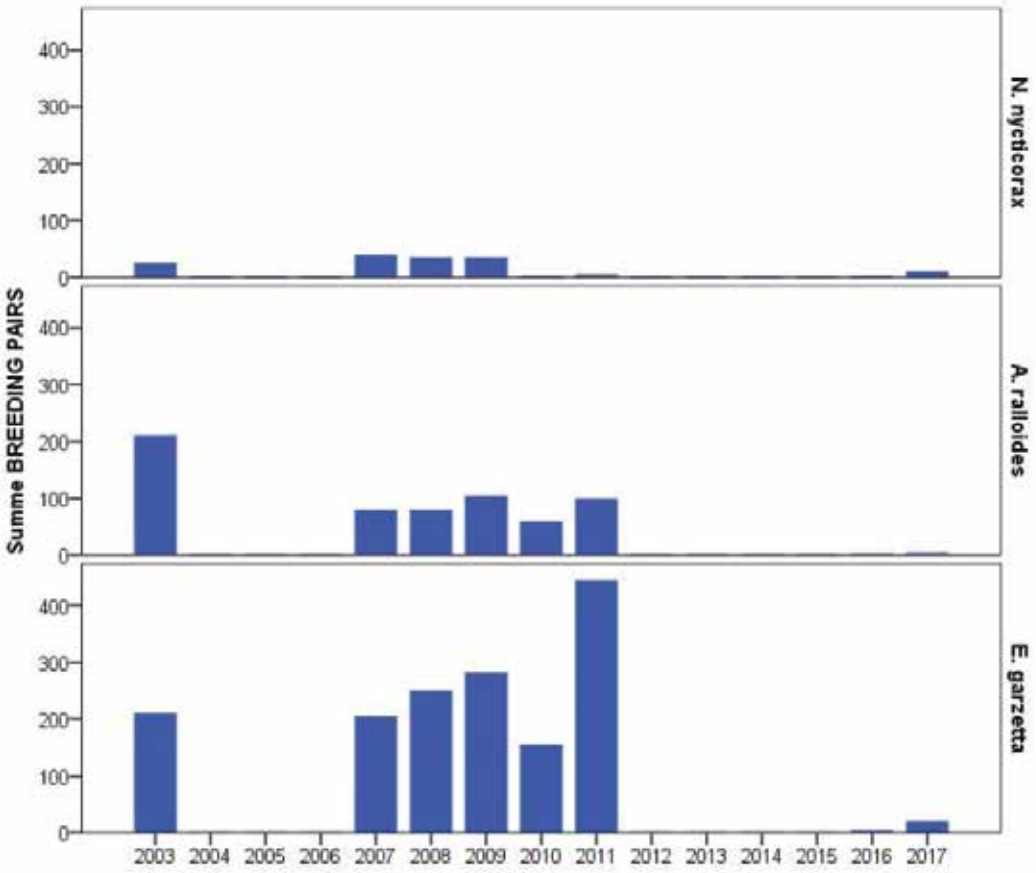


Figure 9: Breeding numbers of Black-crowned Night-heron *Nycticorax nycticorax*, Squacco Heron *Ardeola ralloides* and Little Egret *Egretta garzetta* on Paratuk Island. Population estimates are based on counts of birds which enter and leave the colony during 1 – 2 hours of observations. While no data is available for the years 2004 – 2006 and from 2012 – 2016, all counts were conducted in mid- to late June.

Zeta rivers. The species is further regularly observed in some other wetlands, like in Buljarica, in Nikšićko Polje, Mrčevo Polje and others.

The five more important pSPAs for Black-crowned Night Heronin Montenegro are:

- Bojana Delta with 35-39 bp
- Skadar Lake with 15-20 bp
- Bjelopavlići valley with a mimum of 8 bp
- Ulcinj Salina with up to 95 i during postbreeding dispersal
- Podgorica and Lower Morača River with more than 15 i during post-breeding dispersal

@P.Sackl

Squacco Heron
Ardeola ralloides

CRITERIA TRIGGERED: *C6 (5 bp, 15 i)*
STATUS: B
POP. MNE: 159-224 bp
% OF POP. IN PSPA: 100%
N OF PSPA WITH OCCURRENCE: 7

Historically, Squacco Heron is known as a common breeding bird at Skadar Lake, along the Bojana River and on the former Zogajsko Blato which is today the Ulcinj Salina (Reiser & Führer 1896). Vasić (1979) found a colony on Šasko Lake and believes that there could be another breeding colony in the marshlands (knete) at the southern edge of the Ulcinj Salina.

With the exception of the former Zogajsko Blato, Skadar Lake and the Bojana River remain the only nesting localities of Squacco Heron in Montenegro. The only or at least main nesting sites on Skadar Lake are located in Pančeva Oka and Crni Žar. Both areas are dominated by a complex of hardly accessible floating peat islets, overgrown with bushes and smaller trees in the NE part on the Montenigrin side of the lake where a large mixed-species heronry of different herons, egrets and Pygmy Cormorants is located. The exact location of nest-sites vary from year to year as the birds move from one area to another within the wider area along the lake's northern shore, depending on natural conditions and human disturbances.

The most recent estimates of the breeding population on Skadar Lake fluctuate between 80 and 120 bp (Mihelič et al. 2017). Breeding numbers seem to be stable over the course of decades. Another large breeding colony was until recently located on Paratuk Island in the lower Bojana River. After an absolute maximum of 210 bp in 2003, breeding numbers on Paratuk varied from 59 - 104 bp between 2007 and 2011 (Euronatur/CZIP database, unpubl. data). Since 2016 most breeding birds have moved from Paratuk Island some 4 km to the SE to a small yet inaccessible alluvial forest stand at the eastern end of Štoj (Fig. 2). Due to the inaccessibility of the site, population estimates are difficult, but breeding numbers may be similar to that on Paratuk Island around 2010.

Results and discussion

Outside the two main breeding areas on Skadar Lake and on the lower Bojana River Squacco Heron is a regular migrant visitor and non-breeding resident. Among the sites where the species is regularly seen Squacco Heron is present in relatively high numbers in the Ulcinj Salina and on the Morača River. In other wetlands the species is less numerous.

pSPAs where Squacco Heron triggers C6 criteria are:

- Skadar Lake with 80-120 bp
- Bojana Delta with 79-104 bp
- Arguably Podgorica and Lower Morača River, Ulcinj Salina and Nikšićko polje all with around 15 i during postbreeding dispersal/migration

@B.Rubinić

@K.Kravos

Purple Heron
Ardea purpurea

CRITERIA TRIGGERED: *C6 (5 bp / 15 i)*
STATUS: B
POP. MNE: 10-20 bp
% OF POP. IN PSPA: 100%
N OF PSPA WITH OCCURRENCE: 8

Historically Purple Heron bred in two sites: 20 or 30 bp in a large heronry in Vranjina on Skadar Lake and more than 30 bp in Zogajsko Blato (nowadays Ulcinj Salina) (Reiser & Führer 1896). In the 1970s the species was also recorded as a breeding bird in a big heronry on Šasko Lake, but breeding numbers are not given by Vasić (1979).

The recent status of the species is unclear, but it is very unlikely that currently any larger breeding colony exists on the territory of Montenegro. Recent observations indicate that, most probably, solitary pairs breed in several parts of Skadar Lake. During the breeding period birds were observed in Hum Bay, Crni Žar, Pančeva Oka, close to Rijeka Crnojevića and in Prevlaka in the NW part of the lake. Summer observations of paired birds and feeding adults in Kneta Curke, Sveti Nikola and in marshlands behind Velika Plaža indicate that the species may still breed in small numbers in the Bojana Delta (Euronatur/CZIP database).

The overall breeding population of Skadar Lake may be estimated at lesser then 10 bp, with, probably, a few pairs elsewhere in the Bojana Delta.

Everywhere else in the country Purple Heron occurs only as a passage migrant, sometimes in larger numbers. In particular, in spring on Ada Islands small flocks of up to 14 i were seen to cross the Adriatic Sea (Euronatur/CZIP database) or to follow the coast during migration (i.e 17 birds off Budva on 3 April 2003: B. Rubinić, pers. obs.).

The only site that based on current knowledge reaches SPA criteria is:

- Skadar Lake with 5 - 10 bp

@P.Sackl

Great White Egret
Ardea alba

CRITERIA TRIGGERED: *C2 (470 i), C6 (15 i)*
STATUS: W, non-br R
POP. MNE: up to 1.100 i during winter
% OF POP. IN PSPA: >95%
N OF PSPA WITH OCCURRENCE: 8

In the 19th century Great White Egret was a rare breeding bird on Skadar Lake and in Zogajsko Blato. However, in a big herony at Manastirska Tapija near Vranjina, Skadar Lake, it was the least numerous species, with only 5 documented nests. In Zogajsko Blato the species bred in a colony of Purple Herons, but the numbers were not established by Reiser & Führer (1896). Later, during the 1960s and 1970s, Vasić (1979) found the species breeding in the already mentioned large heronry on Šasko Lake. Since 2003 single birds and small numbers of up to 5 i are known to oversummer in the Ulcinj Salina and on 16 May 2008 an adult bird was seen at a nest on Paratuk Island, but actual nesting was not confirmed (Euronatur/CZIP database).

Great White Egret is a common and in some areas a numerous species during winter. In some of it, like the Ulcinj Salina, small numbers are present as non-breeding residents all over the year. Outside the breeding season the largest numbers are typically present in the Ulcinj Salina, in other parts of the Bojana Delta and on Skadar Lake. Much smaller numbers which do not reach SPA criteria, are counted outside of these areas.

- Skadar Lake with max 363 - 600 wintering birds counted (IWC)
- Ulcinj Salina regularly with several hundreds and maxima of 501 (2006) and 507 i (2002) individuals (A. Vizi, unpublished, B. Rubinić, pers. obs.)
- Bojana Delta with 78 (2016) up to 135 wintering birds (2004) (IWC)

@R.Mihelič

Little Egret
Egretta garzetta

CRITERIA TRIGGERED: *C6 (5 bp, 15 i)*
STATUS: B
POP. MNE: 289-406 bp
% OF POP. IN PSPA: >95%
N OF PSPA WITH OCCURRENCE: 8

Similar to the last two species of small herons, the core distribution and nesting areas of Little Egret in Montenegro are restricted to Skadar Lake and the Bojana Delta. Since historic times the species is known as a common breeding bird on Skadar Lake, along the Bojana River and in Zogajsko Blato. Although Little Egret abandoned nesting in Zogajsko Blato after the former inland lagoon was transformed into the Ulcinj Salina in the 1930s, the species is still present in the area in large numbers the year-round (Reiser & Führer 1896).

Like for other herons a breeding colony existed on Šasko Lake between 1969 and 1976. From the 1970s another a colony is known from the left arm of the Bojana River on Ada Island. At the same time there were some indications for a further breeding colony in adjoining marshlands near the present Ulcinj Salina (Vasić 1979). It is not clear when the colony on Šasko Lake disappeared.

On Skadar Lake Little Egret breeds in mixed-species heronries in the NE part of the lake, i.e. in Crni Žar and in Pančeva Oka. The most recent estimate in the area amounts at 80 - 120 bp (Mihelič et al. 2017). In the Bojana Delta the species breeds, like other herons, on Paratuk Islands and in a recently established mixed-species colony near Sv. Nikola. Between 2003 and 2011 breeding numbers on Paratuk fluctuated from 210 – 445 bp, but numbers declined considerably parallel to the establishment of the nesting colony in Sv. Nikola since 2015 (Fig. 2; Euronatur/CZIP database, unpubl. data). Outside the two core breeding areas the species is most numerous in Ulcinj Salina which is the main feeding site for birds from the breeding colonies on Paratuk Island and in Sv. Nikola. In addition, the salina regularly holds several hundred birds that stay as non-breeding residents year-round in the area. A small nesting colony of at least 5 nests was discovered in 2003 in Kneta Ćurke, at the E edge of the Ulcinj Salina. The colony was destroyed shortly after its discovery and since then no further signs for nesting were found in the area (Euronatur/CZIP, unpubl.).

Results and discussion

Little Egret is a common non-breeding resident in all wetlands and along the coastline. But, usually outside the core breeding and wintering areas only single birds or small flocks are observed. Generally, the species is a year-round resident and more numerous in the S part of the country, while in the N Little Egret is usually present only during the spring and autumn migration.

The five most important areas for this species in Montenegro are:

- Bojana Delta with 209-286 bp
- Skadar Lake with 80-120 bp
- Ulcinj Salina with regularly several hundred birds and a maximum of 680 i on 1 November 2004 (Euronatur/CZIP database)
- Podgorica and Lower Morača River regularly more than 15 i during post-breeding dispersal/ autumn migration (max. around 50 i)
- Arguably Nikšićko Polje and Tivatska Solila may also hold regularly more than 15 i, but this has not been finally confirmed

@M.Šoškić

@O.Vizi

Dalmatian Pelican
Pelecanus crispus

CRITERIA TRIGGERED: *C1 (10 bp / 30 i), C2 (65 i), C6 (5 bp / 15 i)*
STATUS: B
POP. MNE: 50 bp, 241 i
% OF POP. IN PSPA: 100%
N OF PSPA WITH OCCURRENCE: 3

Dalmatian Pelican is a resident breeding bird in Montenegro. Since the early 20th century the species breeds only on Skadar Lake. The breeding colony on Skadar Lake is known since the end of 19th century, when for the year 1894, 29 bp were reported in Hum bay on the northern side of the lake by Reiser & Führer (1896). At the same time 39 bp in 1892 (Führer 1894) and 20 bp in 1894 (Reiser & Führer 1896) were recorded to nest on Zogajsko blato. After the conversion of the former inland lagoon into the Ulcinj Salina the species stopped to breed in the Bojana Delta.

The population on Skadar Lake was probably stable until the 1970s with an average of ca. 50 bp. In 1972, 52 bp were counted (Vizi 1975, 1979). In the absence of effective control, during the last wars in ex-Yugoslavia, Skadar Lake was heavily disturbed by extensive cross-border trafficking of fuel and other goods and the numbers of pelicans decreased considerably during the 1990s. In addition, nesting success on Skadar Lake is very vulnerable to adverse weather conditions. Because natural nesting sites are located on floating vegetation, peat and reed islets clutches and small chicks are drowned during heavy rains. Hence, nesting success is low and breeding was not recorded on Skadar Lake between 1993 and 2001 (Saveljić & Rubinić 2008). Since 2012 existing laws are enforced by the authorities and artificial nesting platforms (rafts) were installed. Since then all birds use the raft for nesting and with up to 50 bp, between 2012 and 2018, maxima of 241 i were recorded during the post-breeding period in May 2017 (B. Prakljaćić, A. & O.Vizi in press., O. Alexandrou unpubl.).

Outside of the breeding period Dalmatian Pelican also occurs regularly in the Ulcinj Salina. Normally several tens of individuals are present in the salina between July and January, while max-

imum numbers reach up to 147 i (J. Smole, A. Tiefenbach & M. Tiefenbach in CZIP database.). With flocks of several to up to 23 i the species is far less numerous, but regularly present also on Šasko Lake during the non-breeding period, (P. Sackl, unpubl., A.Đeković, pers. comm.).

The presence of Dalmatian Pelican triggers SPA criteria for the following areas:

- Skadar Lake with 50 bp and up to 241 i
- Bojana Delta with up to 23 i on Šasko Lake
- Ulcinj Salina with a regular non-breeding/wintering population of > 50 birds (max. 147 i on 24th October 2009)

@P.Sackl

Pygmy Cormorant
Microcarbo pygmaeus

CRITERIA TRIGGERED: *C2 (290 i), C6 (5 bp / 15 i)*
STATUS: B, W
POP. MNE: 2.920-3.920 bp, up to 11.000 wintering birds
% OF POP. IN PSPA: > 99%
N OF PSPA WITH OCCURRENCE: 8

The most important site for this species is Skadar Lake, where Pygmy Cormorant is known as a breeding bird in large numbers since the 19th century (Reiser & Führer 1896). At that time Skadar Lake was considered as the only breeding site of Pygmy Cormorant in Montenegro, while Zogajsko blato (now Ulcinj Salina) functioned as a wintering area for the species. A significantly large colony was found in the SE part of Šasko Lake on 19 May 1969. Afterwards the species was regularly observed there at least until 1977. At the same time another colony was found at the left arm of the Bojana River on Ada Island and there, presumably, was a further breeding colony close to the S edge of Zogajsko blato – Ulcinj Salina (Vasić 1979). Since then the nesting colonies in the Bojana Delta are restricted to three sites, i.e. Paratuk Island in the Bojana River, Ada Island and recently (probably only since 2015 or 2016), in the forests close to the Bojana River in Sv. Nikola in the Štoj area (Schneider-Jacoby et al. 2006, P. Sackl & B. Rubinić unpubl.).

The breeding population on Skadar Lake counts between 2.500 and 3.500 bp, mostly or exclusively concentrated in the colony in Crni Žar (Mihelič et al. 2017) which is by far the largest breeding colony in Montenegro and only after the biggest known colony in the Danube Delta in Romania (numbering 4.000 bp; BirdLife International 2018, one of the largest nesting colonies of the species in the world). Population numbers in Fig. 1 are rough estimates of breeding numbers on Paratuk Island following to counts of birds which entered or left the colony over 1 – 2 hours of observation. Hence, after a maximum of 350 – 450 bp around 2009, numbers declined considerably since 2010 after the island was overgrown by neophytes and mature willow trees that were formerly used for nesting collapsed over the last years. Breeding numbers in the new colony in Sv. Nikola are almost impossible to count. However, in 2016 numbers were estimated at a minimum of 15 bp. While that is a rather conservative estimate, real breeding numbers may be much larger (Euronatur/CZIP, unpubl.).

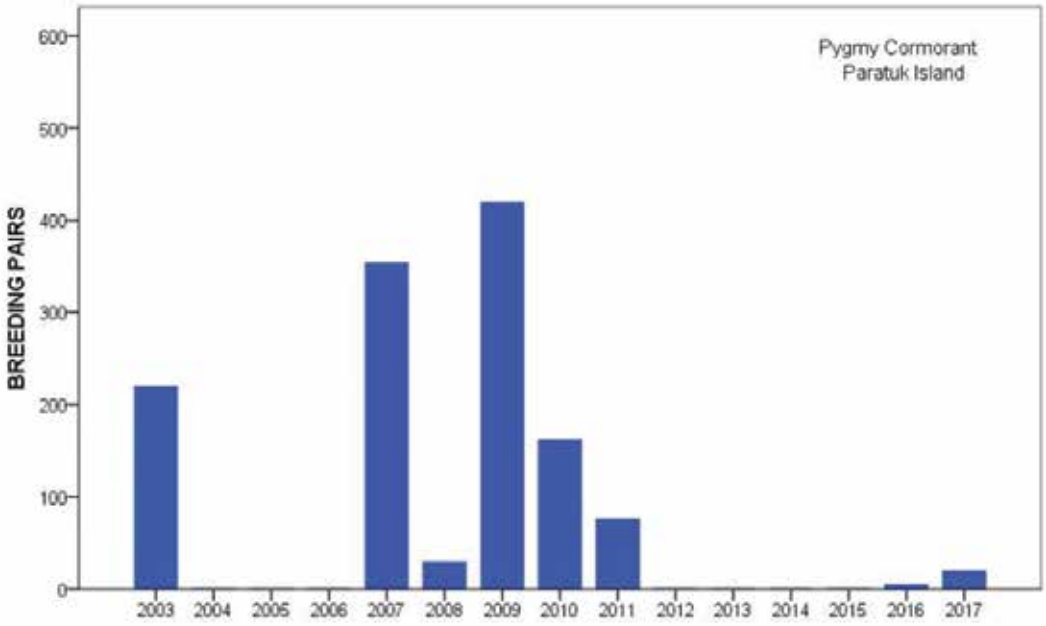


Figure 10: Breeding numbers of Pygmy Cormorant *Microcarbo pygmaeus* on Paratuk Island. Population estimates are based on counts of birds which enter and leave the colony during 1 – 2 hours of observations. While no data is available for the years 2004 – 2006 and from 2012 – 2016, all counts were conducted in mid- to late June.

The winter population of Pygmy Cormorant at Skadar Lake encompasses around 10.000 birds: 11.857 i – year not given (Stumberger & Schneider-Jacoby 2010), 10.062 i in 2012, 8.242 i in 2016 (mid-January, IWC database) that represents incredible 40% of the Black Sea/E Mediterranean biogeographic population (Wetlands Internatonal 2018)!

The five most important sites under C6 criteria for the identification of SPAs are:

- Skadar Lake with 2.500 to 3.500 bp; up to 11.800 wintering birds (40% of the biogeographic population)
- Bojana Delta with up to 420 bp (2010, CZIP/ Euronatur database)
- Ulcinj Salina with a regular wintering/non-breeding population of several hundred birds (max. 639 i2011, CZIP/ Euronatur database), over 2% of the biog. pop.
- Nikšićko Polje with a regular wintering population of around 100 i (max. 155 i in 2015, IWC database)
- Morača River in Podgorica where on a daily routine around 100 i are present all year round, using the river probably mostly as a non-breeding feeding area

@B.Rubinić

Greater Cormorant
Phalacrocorax carbo

CRITERIA TRIGGERED: *C3 (4.000i)*
STATUS: B, W
POP. MNE: 800 to 1.500 bp,
10.-20.000i wintering
% OF POP. IN PSPA: 100%
N OF PSPA WITH OCCURRENCE: >5

Greater Cormorant was known as a breeding bird in Montenegro already from historical sources. A large colony was breeding in Goveđi Brod (today's Crni Žar) area at the NE side of the Montenegrin part of Skadar Lake (at that time part of Albania) at the end of 19th century (Reiser & Führer 1896). Interestingly the breeding of the species wasn't confirmed again until 1978, when the colony on Skadar Lake started being re-established. After the first few years of "wandering" around the eastern part of the lake, the colony finally "settled" in the Pančeva oka area. Few smaller colonies emerged later in addition to this larger one in localities of Manastirska tapija, Zetica and Ckla. Currently the population on Skadar Lake fluctuates between 800 and 1.500 bp (Vizi 2018).

The winter population of Greater Cormorant at Skadar Lake encompasses between 10.000 and 20.000 birds: 9.126i (2014), 11.092 (2013), 14.927 (2008) and 19.040 (2012) (IWC database) that represents 2,5% to 5% of the Black Sea/E Mediterranean biogeographic population (Wetlands Internatonal 2018).

In other areas the populations of the species don't reach high numbers and are far below the threshold for SPA C3 criteria. Two pairs were reported breeding in Bojana Delta in 2003/04 (Schneider-Jacoby et al. 2006) and a few were probably nesting on Slano Lake in Nikšićko polje in 2018, when breeding behaviour was observed there in the framework of this project's field work.

The only site where Greater Cormorant reaches C3 criteria for SPA selection is:

- Skadar Lake where 10.000i to 20.000i gather during winter period, reaching 2,5% to 5% of the biogeographical population

@B.Rubinić

Eurasian Thick-knee
Burhinus oedicnemus

CRITERIA TRIGGERED: *C6 (5 bp/15 i)*
STATUS: B
POP. MNE: 35-55 bp
% OF POP. IN PSPA: 100%
N OF PSPA WITH OCCURRENCE: 4

According to Reiser & Führer (1896) Eurasian Thick-knee was a common bird in the dry fields of Ćemovsko polje, NE of Skadar Lake, on the right bank of the Morača River near Kurilo, as well as in the dunes of Velika Plaža, on Ada Island and on Ćemovsko polje (Reiser & Führer 1896). Since then a large portion of dry stone steppes and dry, extensively used arable fields in Ćemovsko polje and areas along the N shore of Skadar Lake which once were main habitats for the species in Montenegro, were, between 1977 and 1982, transformed in huge vineyards that nowadays cover 2.310 ha (Plantaže 2018). Only about 800 ha, i.e. 30% of the original size, remain in natural or semi-natural condition till today. The population of European Thick-knee in remaining habitats in Ćemovsko polje was never systematically surveyed. However based on numerous accidental observations and a few partial accounts (i.e., Saveljić 2004, M. Jovićević, unpubl. data) breeding numbers can be estimated at 5-10 bp which breed regularly in this area.

Currently, the Bojana Delta, including the Ulcinj Salina, is by far the most important breeding area of this species in Montenegro. While arid mudflats with sparse vegetation are still plentiful in evaporation basins, the recent abandonement of salt production has affected the breeding population of Eurasian Thick-knee lesser then other waterbirds. During the early 2000s breeding numbers in the salina were estimated at 6 – 16 bp (Schneider-Jacoby et al. 2006, Stumberger et al. 2008). More recent estimates, 2016 – 2017, amount to 13 - 22 bp (Sackl et al., in prep.).

At the same time, in the 2000s breeding numbers in other parts of the Bojana river delta, in particular, on Ada Island, in the sand dunes behind Velika Plaža and extensive pasturelands between Stoj and Sv. Nikola, constituted about 70% of the overall breeding population of the delta (including the Ulcinj Salina). In 2003 the total population, the Ulcinj Salina excluded, amounted

to 20 bp, with 12 bp on Velika Plaža, 3 bp on Ada Island, 3 bp in Spatula and 2 bp in Štoj. Here coastal sand dunes and dry pasturelands are the main breeding habitats (Schneider-Jacoby et al. 2006). While the population in the Ulcinj area is known since the 19th century (Reiser & Führer 1896), earlier population estimates for the period between 1972 anhd 1975 by Vasić et al. (1977) amount to 25 bp. Recent surveys of main breeding habitats on Ada Island and Velika Plaža indicate that, following to developments for tourism and urbanization, population size has decreased by more than 60% since 2003 (Euronatur/CZIP database).

Apart from Ćemovsko Polje and the Bojana Delta the breeding of the species is known only from the right bank of the Morača River between Smokovac and Bioče, N of Podgorica. Up to 4 bp were reported for the area by Saveljić (2008b) in 2008, but the site was never revisited. Potential breeding areas in dry pastures and arable lands exist also along the lower Morača river valley, e.g. in the Kokoti, Botun, and Kurilo area. Surveys especially focused on the species are needed in these areas.

According to C6 criterion the following areas qualify as pSPAs for Eurasian Thick-knee:

- Ulcinj Salina with 13 - 22 bp
- Bojana Delta with up to 10 - 20 bp
- Ćemovsko Polje with 5 - 10 bp

@P.Sackl

Eurasian Oytercatcher
Haematopus ostralegus

CRITERIA TRIGGERED: *C1 (60 i), C6 (5 bp/15 i)*
STATUS: B, M
POP. MNE: >700 i during migration
% OF POP. IN PSPA: 100%
N OF PSPA WITH OCCURRENCE: 3

Eurasian Oytercatcher is a very rare breeding bird in Montenegro. However, the small breeding population is known to bird researchers for more than a century. At the end of the 19th century Reiser & Führer (1896) reported three pairs that have probably bred on Ada Island in the Bojana Delta. Although nests were never found, territorial behaviour was observed during breeding time (Reiser & Führer 1896).

Later, Vasić et al. (1977) estimated the overall population in the Bojana Delta which is the only breeding site in Montenegro at 6 bp: 2 bp each on Ada Island, Velika Plaža and in Zogajsko Blato/Ulcinj Salina. The same authors found the first and, so far, probably the only nest ever found in Montenegro, in the littoral zone on Ada Island. With at least 4 bp on Ada Island and on Velika Plaža in the Montenegrin side of the delta, and a total of 8 – 10 bp, the species was still thriving in the Bojana Delta in the early 2000s (Schneider-Jacoby 2006). Following the pressures from tourism along the whole beach between Ulcinj and Ada Island, since approximately 2008, the species no longer breeds along the Montenegrin coast. No birds were found during a survey along the whole coastline in May 2018 (Euronatur/CZIP database). According to breeding bird surveys since 2016, 1 – 2 pairs may occasionally breed in the Ulcinj Salina but, since the 1980s, nesting was never formally confirmed in the saina (Sackl et al., in prep.; Sovinc et al. 2017). Even during migration Eurasian Oystercatcher are currently present in Ulcinj Salina only occasionally and in very small numbers (max. 5 i, 25 April 2003). Thus, current numbers in the Ulcinj Salina do not reach SPA thresholds.

In contrast to low numbers further inland, during migration the species passes the delta front of the Bojana River along Velika Plaža and Ada Island in comparably large numbers. In spring, 2010 – 2015, annual totals of 500 – 774 migrants (median: 665.5 i) were counted during ground observations on visual bird migration on Ada Island. In the same site a daily maximum of 214 i was observed on 24 March 2013 (J. Hanžel, unpubl.).

Hence, the Bojana Delta is the only site where Eurasian Oystercatcher reaches SPA thresholds under, both, C1 (20 i) and C6 criteria (15 i):

- Bojana Delta with regularly > 700 migrants along the coastline of Ada Island and Velika Plaža

@P.Sackl

Pied Avocet

Recurvirostra avosetta

CRITERIA TRIGGERED: *C6 (15 i)*
STATUS: M
POP. MNE: 80-400i during spring migration
% OF POP. IN PSPA: 100%
N OF PSPA WITH OCCURRENCE: 2

In Montenegro the records of Pied Avocet are limited to Ulcinj Salina and Bojana Delta area. Even in those two areas the species is not common, and in Ulcinj Salina flocks of Pied Avocets rarely exceed 10i (Sovinc et al. 2017, CZIP/EuroNatur database). In terms of its phenology and breeding status, the Pied Avocet is usually observed during spring migration (March-May), much rarely during summer and winter months. It is thought to be a possible or irregular breeder of Ulcinj Salina, as in some years breeding behaviour has been observed, yet the breeding was so far not confirmed (Sovinc et al. 2017, Sackl et al. in prep.). The numbers in Salina [fell??] between 2003 and fluctuated between 1i and 101i (median = 2, n=18).

Annual numbers of 79 – 372 migrants which passed Ada Island during ground observations in March until mid-April, 2013 - 2015, reach the threshold of C6 criterion or regularly occurring 15i (Euronatur/CZIP database). In all other wetlands, like Tivat Salina and Skadar Lake, the records for this species are missing (CZIP database).

The only site where Pied Avocet reaches C6 criteria in Montenegro is therefore:

- Bojana Delta with regularly between 79 and 372 migrants along the coastline of Ada Island and Velika Plaža

@P.Sackl

Black-winged Stilt
Himantopus himantopus

CRITERIA TRIGGERED: *C6 (5 bp/15 i)*
STATUS: B, M
POP. MNE: 45-130 bp;
up to 645 i during migration
% OF POP. IN PSPA: 100%
N OF PSPA WITH OCCURRENCE: 3

Black-winged Stilt is a relatively new breeding bird in Montenegro. The first breeding records were reported by Istvan Pelle and Vojislav Vasić in 1974, when up to two pairs were found in the Ulcinj Salina (Vasić et al. 1977). During the 1980s the population of Black-winged Stilt increased steadily in the salina up to its current level of around 100 bp (Puzović et al. 1992). Similar numbers between 40-130 bp were recorded from 2003 – 2006 (Stumberger et al. 2008). Currently breeding numbers fluctuate considerably depending on weather conditions. Insufficient water management after the abandonment of salt production in the Ulcinj Salina poses a significant threat for the nesting success and breeding populations of all shorebird species breeding in the area. In particular, short-term fluctuations of water level and heavy rains cause the flooding of nests and drowning of small chicks. After heavy floodings in spring 2016 the population collapsed to 43 bp in 2017, but recovered to a total of 80 bp 2018 (Sackl et al., in prep.). Because the Ulcinj Salina still remains as the only nesting site of the species in Montenegro, adequate water management and a careful monitoring of water levels and breeding numbers are necessary.

During the pre-breeding and migration period, in March till mid-April, a maximum of up to 645 i were counted in the Ulcinj Salina on 5 April 2013. While the majority may stay to breed, there is probably always a portion of birds that stay only for a short stop during migration (Euronatur/CZIP database). Besides the Ulcinj Salina, numbers of migrants reach the C6 criterion for SPA designation in only two other sites:

- Ulcinj Salina with 45-130 bp and up to 645 i in the pre-breeding period
- Tivat Salina with up to 56 i during migration (Saveljić & Rubinić 2006)
- Bojana Delta with 35 – 45 birds counted during ground observations on Ada Island (Sackl et al. 2014, 2017)

@G.Bernard

Golden Plover
Pluvialis apricaria

CRITERIA TRIGGERED: *C6 (15i)*
STATUS: W
POP. MNE: 500-900i wintering
% OF POP. IN PSPA: 100%
N OF PSPA WITH OCCURRENCE: 1

Apart from the Ulcinj Salina, Golden Plover is rare migratory and winter visitor in Montenegro. In the Ulcinj Salina the species is most abundant in autumn and, particulary, in winter. Since 2004 regularly around 500i are present in salina during the International Waterbird Census. Although numbers are normally lower in autumn, a maximum of 930 birds were recorded on 29 November 2002 (B. Rubinić, pers. obs.). Outside the Ulcinj Salina the species is probably regularly, but in smaller numbers, present on nearby pasturelands in Stoj and on Velika Plaža in the Bojana Delta. Maximum numbers of 37i were counted during ground oberservations at the delta front of the Bojana River in March 2014 (Sackl et al. 2017). Accidental observations in the same area suggest that smaller flocks may stay on Velika Plaža and Ada Island during winter (B. Rubinić, pers. obs.). The current status of the species on Skadar Lake and in Ćemovsko Polje is not well known. But especially in some parts of Skadar Lake (Morača river mouth, Plavnica) the Golden Plover may be a regular migrant, stopping-over and resting during migration in significant numbers (A. & O.Vizi, pers. comm.). L. v. Führer observed strong migration of Golden Plovers near Vranjina in September and October on Skadar Lake and, in March, on Zogajsko Blato (now Ulcinj Salina) (Reiser & Führer 1896). However, the status on Skadar Lake should be documented with further observations.

The only two areas that meet C6 criteria for SPA identification:

- Ulcinj Salina with around 500i wintering
- Bojana Delta with at least tens of individuals during spring migration

@P.Sackl

Kentish Plover
Charadrius alexandrinus

CRITERIA TRIGGERED: *C2 (400i), C6 (5 bp/15i)*
STATUS: B, W
POP. MNE: 75-140 bp, 200-500i wintering
% OF POP. IN PSPA: 100%
N OF PSPA WITH OCCURRENCE: 2

Following to the species' specific habitat requirements, the breeding of Kentish Plover is restricted to open mudlands or sandy areas without or with sparse, mainly halophile vegetation usually at or near the coast (del Hoyo et al. 1996). In Montenegro adequate breeding habitats are not common and mostly restricted to the Ulcinj Salina and coastal areas in the Bojana Delta. Before the early 20th century [not sure here, please check!], Ulcinj Salina was covered by Zogajsko Blato (Zogaj muds), a large freshwater wetland and brackish inland lagoon. This area was not suitable for the nesting of Kentish Plover. At that time the only breeding sites in the Bojana Delta existed along the coastline of Velika Plaža and on Ada Island. In this area Reiser & Führer (1896) found no more than about 5 bp at the end of the 19th century.

Although the details are missing, after the conversion of Zogajsko blato in the 1930s, the species colonized the open mudflat habitats in the evaporation basins of the Ulcinj Salina. In the 1970s Vasić et al. (1977) estimated the breeding population for the whole Ulcinj area at about 15 bp. At that time breeding could be confirmed only Ada Island, while the breeding status and actual population size remained unclear in the Ulcinj Salina in the period of 1972-1975. Breeding in the salina was firstly confirmed and estimated at 50 bp in 1988 (Puzović et al. 1992). Numbers remained comparably constant between 30 – 50 bp over the next 25 years (Saveljić 2002, Schneider-Jacoby et al. 2006, EPA 2015).

Like Collared Pratincole and European Thick-knee, the species may benefit from the current more dry conditions after the abandonment of salt production in the Ulcinj Salina in 2013. Following a low after heavy floodings in spring 2016 the population exceeded 90 and 130 bp in recent years after the resumption of water management and regulation of water-level in evap-

oration basins (Sovinc et al. 2017, Sackl et al., in prep.). In 2017 and 2018 Kentish Plover nested mainly in largly dried-out basins of the 1st and 2nd evaporation grade in the northern and central parts of the salina (Sackl et al., in prep.). The current favourable conditions for several wader species results from a combination of weather conditions and poor water management. An elaborate management of the influx of seawater and water-level, based on constant observation of habitat conditions, will help to reduce nest-losses and chick mortality (EPA 2015, Sovinc et al. 2017, P. Sackl et al., in prep.).

Outside the breeding season, Kentish Plovers are present in the Ulcinj Salina and Bojana Delta all year round. During migration and in winter the maxima in the Ulcinj Salina range between 300 and 500i (Euronatur/CZIP databse). Outside the Bojana Delta no areas are known where Kentish Plover is present in significant numbers. So far, also the Tivat Salina has for some unknown reasons - small area, poor water regime or exposure to predation - not been colonized for nesting.

The two areas that trigger criteria for SPA identification are:

- Ulcinj Salina with 70 - 130 bps under C6 criteria, and up to 500i present (reported max. 472 i, i.e. 1.2% of the biogeographic population under C2 criterion)

- Bojana Delta with 4 - 10 bp or 10 – 20 resident birds (Sackl et al. 2017) under C6 criterion

@M.Šoškić

@B.Rubinić

Northern Lapwing
Vanellus vanellus

CRITERIA TRIGGERED: *C1 (60i), C6 (5 bp/15i)*
STATUS: B, W, M
POP. MNE: 500-900i (winter)
% OF POP. IN PSPA: 100%
N OF PSPA WITH OCCURRENCE: 1

Northern Lapwing is a regular migrant and winter visitor in Montenegro. Also Reiser & Führer (1896) reported the species as common during migration in the Ulcinj area, until recently it was never proved to breed in the country. Since the start of Euronatur/CZIP's Adriatic Flyway project in 2003 low numbers of a few birds are known to summer in the Ulcinj Salina. During breeding bird surveys, 2016 – 2018, annually a minium of 1 – 6 bp were present and in June 2018 small chicks were seen. The later represents the first confirmed breeding record in Montenegro (Sackl et al., in prep.). The species is more abundant during autumn migration than in spring. During total counts numbers fluctuated in the salina between 1 – 1.175i (median = 50, n = 9) and 1 – 128i in spring (median = 5, n = 11). In contrast, with a maximum of 4.143 birds in January 2011 the salina's winter population regularly exceeds 500 i (median = 643, n = 15). In addition to the Ulcinj Salina several hundred birds winter regularly on Skadar Lake, mainly in Pančeva Oka (max. 1.100i in 1996; O. & A. Vizi, IWC database).

In other parts of the country Northern Lapwing is migrant visitor, only. In contrast to the Ulcinj Salina large flocks were recorded in several sites, especially, during spring migration. Among the most important sites in spring, is Nikšićko Polje where flocks of hundreds are common. Here, on 3 March 2018, during field work for the present report a daily maximum of 1.351 i was observed. The species further stops regularly in Ćemovsko Polje (hundreds observed in April 2006), in wet meadows in Mareza, Bjelopavlići valley (200i on 28 February 2018), and on Plav Lake (again 200i on 3 March 2018). Most strikingly, in the Ulcinj Salina and at the delta front of the Bojana Delta Northern Lapwing is a rare migrant. While in March and April many waders enter the hinterlands of the delta from the sea, no evidence for crossing the Adriatic Sea by Northern Lapwing was found in spring during ground observations (Sackl et al. 2014, 2017).

Numbers of Northern Lapwing reaches C1 and C6 criteria in following sites:

- Ulcinj Salina where 6-8 bp bred in 2018 and up to 4.143i in winter
- Skadar Lake hundreds (max. 1,100 in 1996, O. & A. Vizi unpubl. data) in winter and during spring migratio
- Nikšićko Polje hundreds of birds (daily max. of 1.351i, 3 March 2018) stopping-over in spring
- Bjelopavlići Valley hundreds stopping-over in spring
- Ćemovsko Polje hundreds stopping-over in spring
- Plav Lake and Lim Valley hundreds stopping-over during spring migration

@U.Paal

Eurasian Curlew
Numenius arquata

CRITERIA TRIGGERED: *C1 (60i)*
STATUS: M, W
POP. MNE: up to 1.200i
stopping-over during migration
% OF POP. IN PSPA: 100%
N OF PSPA WITH OCCURRENCE: >5

Eurasian Curlew occurs in Montenegro regularly during migration in coastal and inland wetlands. Since the 19th century it is known as a regular migrant visitor in the Bojana river delta and from the northern banks of Skadar Lake. Reiser & Führer (1896) saw the species even on Riblje jezero in the Durmitor Massif at an altitude of 1.430 m a.s.l.

Till today inland observations remain relatively rare, therefore we are only able to assess the current status of the species for coastal wetlands. In the Ulcinj Salina the Eurasian Curlew occurs in relatively large numbers all-year round, with the bulk of birds observed late autumn (November) and early spring (March). Since 2004 up to 75i winter in the salina, while during spring migration up to 165 - 190 birds were registered (J. Hanžel, unpubl.; Euronatur/CZIP database). During counts of actively migrating birds (ground observations) on Ada Islands, between 2010 and 2015, flocks of 165i up to 1.177i were registered in March till mid-April (Sackl et al. 2014, 2017). In other Montenegrin wetlands Eurasian Curlew can be more or less regularly observed in smaller numbers (e.g., Saveljić & Rubinić 2006), but we know of no other area where regularly more than 60 birds are present. A more focused monitoring of migration other, coastal and inland wetlands might, however, reveal some other important sites for the species (i.e., Skadar Lake, Nikšićko Polje, Tivat Salina, etc.).

According to C1 criterion the species triggers SPA identification in:

- Bojana Delta with annual totals of up to 1.176 i passing or stopping-over during spring migration
- Ulcinj Salina with up to 190 birds during spring migration and up to 75i in winter

@U.Paal

Black-tailed Godwit
Limosa limosa

CRITERIA TRIGGERED: *C1 (60i)*
STATUS: M
POP. MNE: up to 3.000 i stopping-over during spring migration
% OF POP. IN PSPA: 100%
N OF PSPA WITH OCCURRENCE: 3

The bulk of Black-tailed Godwits cross Montenegro during spring migration from mid-March to April. According to Reiser & Führer (1896), during migration Black-tailed Godwits avoid the continental parts of Montenegro. On 17 March 1895 L. v. Führer observed large flocks of Black-tailed Godwits resting in Zogajsko Blato what is now Ulcinj Salina (Reiser & Führer 1896). Till today this site is the main stop-over and resting area of the species in the country. In mid-March large flocks of hundreds, sometimes thousands of Black-tailed Godwits stay for feeding and resting in Ulcinj Salina. During 16 total counts since 2003, spring numbers in the Ulcinj ranged from an absolute minimum of 1 up to 3.423i on 23 March 2006 (Euronatur/CZIP database). Godwits are one of the main quarry of hunters in spring. Therefore, the birds are very shy and stop-over duration is apparently particularly short. Often flocks of 200-700 birds can be seen in the Ulcinj Salina in mid-March. The study of visual bird migration on Ada Island show that before and after that period of time only few birds enter the hinterlands of the Bojana Delta from the Adriatic Sea. While many birds which stop-over in the Ulcinj Salina can be seen at the coast, during good migration up to 960 godwits per day may cross the delta front (Sackl et al. 2014, 2017). During 176 – 288 observation hours, in spring 2010 – 2015, annual totals of migrating Black-tailed Godwits on Ada Island fluctuated between 131i (2010) – 1.609i in spring 2014 (Sackl et al.2014, 2017).

Also in the Bojana Delta, significant numbers frequent the Tivat Salina. So far, a maximum of up to 350i were observed in Tivat (Saveljić & Rubinić 2004). Although the species could be expected at least on Skadar Lake and in Nikšićko Polje, we are not aware of any inland records. However, future observations will reveal more information.

Results and discussion

The species triggers C1 criteria in three sites:

- Ulcinj Salina with hundreds of birds (200-700i.; max. 3.423i) stopping–over, mainly during spring migration in March
- Bojana Delta with hundreds crossing shoreline into the hinterlands of the delta in spring (daily max.1.609i, 2014)
- Tivat Salina with up to 350i stopping-over during spring migration

Black-tailed Goodwit habitat on Ulcinj Salina pSPA, @M.Šoškić

@A.Vizi

Ruff
Calidris pugnax

CRITERIA TRIGGERED: *C6 (15i)*
STATUS: M
POP. MNE: up to 3.500i stopping-over during spring migration
% OF POP. IN PSPA: 100%
N OF PSPA WITH OCCURRENCE: >7

Ruff visits Montenegro in relatively high numbers during spring migration, but is present in much lesser numbers in autumn. The species can be observed in many coastal as well as in inland freshwater wetlands. Although there are some count data for other areas available, the majority of high quality data are restricted to the Ulcinj Salina and the wider Bojana river delta where systematic monitoring schemes have been established within the frame of the Euronatur/CZIP Adriatic Flyway project. Ruffs are present in particularly high numbers in the Ulcinj Salina, where total counts amount up to 2.000 birds. So far, maxima of 2.200i and 2.600i were counted in the salina on 17 March 2010 and 22 March 2006 (Euronatur/CZIP database). Although many birds may cross the area during the night or in high altitudes, considerably numbers of 500 – 600 actively migrating birds were seen during ground observations on Ada Island, 2013 – 2015 (Sackl et al. 2014, 2017).

In March and April flocks of Ruffs that pass Montenegro regularly stop in wet meadows in other areas. For example, during field work within the framework of the present project, 590i were observed on Nikšićko Polje on 3 March 2018. 15i were seen on Plav Lake and on the same day 25i in the Mareza meadows, in Bjelopavlići, on 28th of February 2018. The species is further regularly seen on Skadar Lake (O. & A. Vizi, pers. comm.) and in the Tivat Salina (Saveljić & Rubinić 2006, Sackl et al. 2006).

The five most important areas that trigger C6 criteria for SPA identification are:
- Ulcinj Salina with up to 2.600i (spring)
- Nikšićko Polje with up to 590i (spring)
- Bojana Delta with a cumulated count of up to 600i (spring)
- Skadar Lake with tens or hundreds resting in Pančeva oka and in Plavnica during spring migration
- Bjelopavlići Valley with tens of birds stopping-over during spring migration

@M.Jovićević

Curlew Sandpiper
Calidris ferruginea

CRITERIA TRIGGERED: *C1 (60i)*
STATUS: M
POP. MNE: up to 734 migrants during spring migration
% OF POP. IN PSPA: 100%
N OF PSPA WITH OCCURRENCE: >3

As for many other shorebirds, the single most important area in Montenegro in which Curlew Sandpiper reaches SPA criteria is the Ulcinj Salina. In spring, mainly between early April to mid-May, up to several hundred birds stop-over for feeding. During waterbird counts, since 2003 up to 734i were counted during spring migration (median = 143, 2 – 734, n = 8). Because daily numbers fluctuate heavily, stop-over duration appears to be short. However, occasionally small flocks of up to 26i stay over summer (Euronatur/CZIP database).

The single site where the species reaches C1 SPA criteria is therefore:

- Ulcinj Salina with several hundred migrants in spring

@R.Mihelič

Dunlin
Calidris alpina

CRITERIA TRIGGERED: *C3 (5,000i)*
STATUS: M
POP. MNE: up to 10,500 i overwintering
% OF POP. IN PSPA: 100%
N OF PSPA WITH OCCURRENCE: >3

Like for other waders the coastal areas of the Bojana Delta and, in particular, the Ulcinj Salina constitute the most important wintering and resting sides for Dunlin in Montenegro. In the salina and in lower numbers at the sandy shores along the delta-front of the Bojana River the species is present annually between late summer till May. During autumn and spring migration maximal counts in the salina reach up to 7.555i (median = 1.803i, n = 13) and 9.132i (median = 1.094, n = 17) in spring. According to January counts within the IWC scheme since 2004 the winter population fluctuates between 33 and 10.503i (median = 3.435, n = 15) in the Ulcinj Salina. Annual numbers of 465 – 979 migrants which passed Ada Island during ground observations in March until mid-April, 2013 - 2015, doesn't reach the threshold of C3 criterion or 1% of the biogeographic population (Euronatur/CZIP database). In all other wetlands, like Tivat Salina and Skadar Lake, the species was present only in very small numbers during IWC mid-winter counts (IWC database).

The only site where the species reaches SPA criterion C3:

- Ulcinj Salina with up to 10.503i or 2.1% of the biogeographic population during winter (Stumberger & Schneider-Jacoby 2010, Stumberger et al. 2008).

@B.Rubinić

Spotted Redshank
Tringa erythropus

CRITERIA TRIGGERED: *C1 (850i)*
STATUS: M, W
POP. MNE: up to 2.200 i stopping-over during autumn migration
% OF POP. IN PSPA: 100%
N OF PSPA WITH OCCURRENCE: >5

In the Bojana Delta Spotted Redshank is present the whole year over. But, as already L. v. Führer noticed at the end of the 19th century, the species is more numerous during migration and in winter, especially in the Ulcinj area (Reiser & Führer 1896). Although Spotted Redshank, during migration, may occur in almost all wetlands, the only area in Montenegro where it is regularly present in significant numbers is the Ulcinj Salina. Here, recent numbers, 2003 – 2017, in autumn ranged from 16 – 2.249i (median = 440i) and between 27 and 725i (median = 184 i) during spring migration. The winter population is smaller (11 – 460i), while in summer flocks of 64 up to 246i are present almost annually (Euronatur/CZIP database).

The species reaches C3 criteria for SPA identification in:

- Ulcinj Salina were regularly up to 2.200i, i.e. 2.6% of the biogeographic population, stop-over during autumn and spring migration and slightly smaller numbers are present during winter and the summer months.

@R.Mihelič

Wood Sandpiper
Tringa glareola

CRITERIA TRIGGERED: *C6 (15i)*
STATUS: M
POP. MNE: up to 2.000i
stopping-over during migration
% OF POP. IN PSPA: 100%
N OF PSPA WITH OCCURRENCE: >5

Wood Sandpiper is a relatively common bird in Montenegro during spring migration. L. v. Führer noticed the beginning of migration at the end of March (Reiser & Führer 1896). In the Ulcinj Salina the species is rather rare in autumn, but is present regularly and in larger numbers of up to 750 migrants in spring (mainly April). The species probably migrates in high altitudes and during the night. Hence, only a few birds were seen during daytime observations on visual bird migration on Ada Island (Sackl et al. 2014, 2017). Also from other areas from where the species is known to stop-over from accidental observations. At least some areas may be used regularly and probably in larger numbers in spring and, probably, also in autumn.

The only area where the species undoubtedly triggers SPA identification according to C6 criterion is:

- Ulcinj Salina with annually up to a several hundred birds resting during spring migration; e.g., 750i on 22 March 2010, 576i on 4 April 2013, 486i on 16 April 2004 (Euronatur/CZIP database) as well as an absolute max. of 2.000i on 18 April 1988 (S. Puzović. unpubl. data).

@R.Mihelič

Collared Pratincole
Glareola pratincola

CRITERIA TRIGGERED: *C2 (230 i), C6 (5 bp/15 i)*
STATUS: B
POP. MNE: 180-195 bp
% OF POP. IN PSPA: 100%
N OF PSPA WITH OCCURRENCE: 2

Collared Pratincole is a further example for a breeding bird species that has survived in Montenegro with a more or less stable population over the course of more than a century. Reiser & Führer (1896) reported about 80 bp that bred in Bojana Delta at the end of the 19th century. In 1974 Vasić et al. (1977) found 40 bp of the species on Ada Island, but the next year due to the construction of a holiday complex the colony was already reduced to a few pairs. At the same time another nesting colony of 40 bp was found in nearby Ulcinj Salina (Vasić et al. 1977).

Currently, scattered breeding attempts - of about 5 bp in 2017 - on Ada Island and Spatula, next to Velika Plaža, are regularly destroyed by tourists, feral dogs and local people. Following to adequate habitat conditions after the drying up of evaporation basins till early summer, the population in the Ulcinj Salina is currently up from 20 – 100 bp, 2003 – 2006, to 170 – 190 bp in 2017 and 2018 (Schneider-Jacoby et al. 2006, Stumberger et al. 2008, Sackl et al., in prep.). The current population of Collared Pratincole in the Ulcinj Salina constitutes up to 12.9% of the population of the Balkan Peninsular and 2.5% of the total European population. Hence, after joining the European Union, Montenegro will harbour the largest breeding colony of the Union (Sackl et al., in prep.).

No other breeding sites are known in Montenegro. Everywhere else in the country, including Morača River and Skadar Lake where Reiser & Führer (1896) saw large flocks of Collared Pratincoles in April 1894, the species is currently only an occasional visitor.

The areas that qualify for SPA identification are:
- Ulcinj Salina qualifies with 170 - 190 bp under both C2 and C6 criteria
- Bojana Delta with 5 bp qualifies under the C6 criterion

@U.Paal

Little Gull
Hydrocoloeus minutus

CRITERIA TRIGGERED: *C2 (1000i), C6 (15i)*
STATUS: M
POP. MNE: up to 9.000i stopping-over during spring migration
% OF POP. IN PSPA: 100%
N OF PSPA WITH OCCURRENCE: >7

On winter and during migration Little Gull is a mainly marine species which spends most its time on the open sea. The first records of Little Gull in Montenegro date back to the first half of the 19th century. On 2 February L. v. Führer shot a male in Ulcinj and saw a flock of 50i that followed his ship up the Montenegrin coast on 16 February 1895 (Reiser & Führer 1896). In contrast to the observations of L. v. Führer, nowadays the species is scarce in autumn and a rare winter visitor. However, sometimes strong westerly winds blow many birds from the sea close to the coast. Hence, particularly in spring large numbers of Little Gulls may be concentrated along the delta front of the Bojana Delta. Here total numbers of daily counts on Ada Island between early March to mid-April, 2010 – 2015, amounted to 1.330i (2010) – 11.730i (2015). While migration close to coast depends heavily on weather conditions, in spring peak numbers were observed in the second half of March and early April (Sackl et al. 2014, 2017). Because migration proceeds during April till mid-May a large portion of migrants were not captured during the studies on Ada Island. However, based on the numbers from Ada Island at least 1,3% up to 11,7% of the biogeographic population pass the delta front of the Bojana Delta in spring. While the species is present regularly but in considerably lower numbers also in the Ulcinj Salina, the occurrence of the species in other parts of the country is not well documented. Since 2003, total counts in the salina in spring and early summer vary between 1 – 32i (n= 8; Euronatur/CZIP database). The maximum of 143i was observed in the Ulcinj Salina on 26 March 2013 (J. Hanžel, unpubl.).

The only two sites where the species trigger SPA criteria are:

- Bojana Delta with at least 1.300 – 11.700i, i.e. 1,3% - 11,7% of the biogeographic population during spring migration, triggering C2 and C6 criteria

- Ucinj Salina with regularly up to 15 - 30 birds during spring migration and a maximum of 143i, triggering C6 criterion

@P.Sackl

Mediterranean Gull
Larus melanocephalus

CRITERIA TRIGGERED: *C2 (770i), C6 (15i)*
STATUS: M, W
POP. MNE: up to 6,000i stopping-over during spring migration
% OF POP. IN PSPA: 100%
N OF PSPA WITH OCCURRENCE: >2

Mediterranean Gull is a species with a relatively well-known migration pattern. From wintering grounds in the N Adriatic region and W Europe the main migration route runs along the coast of of the Adriatic and Ionian Sea to summer breeding grounds in Greece, the Black Sea region, and Turkey (Flamant et al. 2003, Olson 2003). In Slovenia the bulk of migrants are observed in March (Rubinič 1995). In the Bojana Delta the first migrants arrive in mid-March, but main the migration of birds in adult and 2nd summer plumage starts in late-March. During a study of visual bird migration on Ada Island, 2013 – 2015, annually a minimum of 2,700 – 6,000 Mediterrean Gulls passed the delta front by following the coastline in SE direction. A second, lesser known peak in April/May consisted mainly of juveniles. Hence, at least 7.8 % of the biogeographic population passes the area during spring migration (Sackl et al. 2014, 2017). Sporadically, small flocks of juveniles are present in the Ulcinj Salina in June and July, while the species is very rare in autumn. Small numbers appear to stay in the Bojana Delta over winter or even all year round (B. Rubinić, unpubl.), yet numbers and migration dynamics in autumn and winter are not well known. During IWC mid-winter counts the only stray birds were seen in 2004 and 2015. But, currently 25i were present in the Bojana Delta in January 2016 (IWC database). Similarly, in at least small numbers the species occurs along the whole Montenegrin coast during migration. But, currently, the lack of data doesn't allow to identify other, potential wetland sites, like the Tivat Salina or the Buljarica marshlands, as SPAs.

The only site where the species reaches C2 (migration) and C6 criteria (wintering, migration) is:

- Bojana Delta with at least 6,000i, i.e. 7.8 % of the biogeographic population, passing the delta front in spring and occasional winter records

@P.Sackl

Little Tern
Sternula albifrons

CRITERIA TRIGGERED: *C6 (5 bp)*
STATUS: B
POP. MNE: 90 to 120 (150) bp
% OF POP. IN PSPA: 100%
N OF PSPA WITH OCCURRENCE: 2

In Montenegro Little Tern breed only in the Bojana Delta and in the Ulcinj Salina. The coastal breeding sites on Velika Plaža, Ada Island and Zogajsko Blato were firstly described by Reiser & Führer (1896). Following the increased human disturbances, tourist developments and after the conversion of Zogajsko Blato into the salina, today Little Tern breed mainly in evaporation basins in the Ulcinj Salina. At the end of the 19th century the breeding colony of Little Tern on Ada Island numbered 80 - 100 bp (Reiser & Führer 1896). The colony was not found in the same spot in 1975, but for the first time a smaller colony of around 20 bp were noted in the Ulcinj Salina (Vasić et al. 1977). The breeding colony had obviously consolidated by 1988 when 80 - 90 bp were counted in the salina (Puzović 1992). Following the count data from the late 20th and early 21st century, the breeding numbers in the Ulcinj Salina of (68) 90 – 120 (150) bp seem currently to be rather stable (Schneider-Jacoby 2006, Stumberger et al. 2008, EPA 2015, Sovinc et al. 2017; Euronatur/CZIP database). In addition to the salina, Little Terns still attempt to breed in the river mouth of the Bojana river, but nests are regularly destroyed by feral dogs, fishermen and tourists (P. Sackl, unpubl.). Birds from the Ulcinj Salina forage on a daily basis in the sea in front of Velika Plaža and Ada Island in Bojana Delta. Individual pairs that probably nested on the mouth of Matica river on the lower Morača at the end of 19th century (Reiser & Führer 1896) possibly vanished due to extensive gravel excavations that take place in this part of the river.

The only two areas where Little Tern are regularly present in Montenegro are:

- Ulcinj Salina with regularly 68 - 150 bp
- Bojana Delta with feeding and post-breeding resting sites, occasional breeding attempts in the mouth of the Mala and Velika Bojana

@B.Rubinić

Whiskered Tern
Chlidonias hybrida

CRITERIA TRIGGERED: *C2 (1.000i), C6 (15i)*
STATUS: B
POP. MNE: 1.100 to 1.300 bp
% OF POP. IN PSPA: 100%
N OF PSPA WITH OCCURRENCE: >5

Whiskered Tern is not mentioned by most the dilligent early researchers of the bird fauna of Montenegro, Ludwig von Führer and Othmar Reiser (Reiser & Führer 1896). Hence, the species has most probably colonized Montenegro, in particular Skadar Lake, relatively recently (Vizi 2018). On Skadar Lake the first breeding of Whiskered Tern was discovered in 1974, when 15 bp were found in Crni Žar (Vizi 1979b). Since then the numbers have grown significantly. Currently, the total population on Skadar Lake is estimated at 1.200-1.500 bp, the great majority of ca. 1.100 to 1.300 bp (>90%) breeding in the Montenegrin part of the lake (Mihelič et al. 2017, Vizi 2018). A small portion of the birds nesting on Skadar Lake visit the lower reaches of the Morača River for foraging during and after the breeding season. A small number of birds also overwinter on Skadar Lake (1 - 40 birds; A. & O.Vizi, unpubl.). A small colony of Whiskered terns is breeding on Šasko Lake in Bojana Delta SPA. This is probably a relatively new breeding site as in 2003 and 2004 only 4 pairs were observed and the numbers weren't significantly higher until 2012 (B. Rubinić, unpubl.). From 2017 on 20 to 30 bp breed in Šasko Lake (D. Saveljić unpubl), and following the trends on Skadar Lake the numbers might increase further.

Everywhere else in Montenegro Whiskered Tern is a rare and accidental guest.

The three areas that trigger SPA criteria in Montenegro are:

- Skadar Lake that triggers C6 and C2 criteria with 1.100 to 1.300 bp (i.e. ca. 4.000i or 4% of the biogeographic population)
- Bojana Delta with 20 to 30 pairs breeding on Šasko Lake
- Lower Morača River with regularly over 15 birds foraging there during the breeding and post-breeding period

@A.Vizi

Common Tern
Sterna hirundo

CRITERIA TRIGGERED: *C6 (15 i)*
STATUS: B
POP. MNE: 50-180 bp
% OF POP. IN PSPA: 100%
N OF PSPA WITH OCCURRENCE: >5

Common Tern is historically confined to two areas in Montenegro – Skadar Lake and Bojana Delta (including Ulcinj Salina). Already at the end of 19th century single pairs of Common Terns were observed nesting on sandy banks of Morača mouth and Skadar Lake, while on Ada Island there were 8 or 10 pairs breeding when this area was visited by Reiser and Führer (1896). The situation is nowadays different in terms of nesting sites, but the general sites of the species' presence in the country remain the same. Common Terns breed on Skadar Lake and in Ulcinj Salina, while the natural nesting sites on Ada Island have been abandoned, most probably due to much higher levels of disturbance not only by people, but also by wild carnivores (Golden Jackal Canis aureus and Red Fox Vulpes vulpes) and stray dogs that can now easily approach the island as it is connected by the road bridge. On the other hand the marshes of Zogajsko blato were transformed in 1930-es into Ulcinj Salina that provides safer breeding opportunities on islets in saline basins.

On Skadar Lake the number of breeding Common Terns is not carefully monitored between the years. There is however some data that indicates both that the species breeds in three or four standard colonies, usually with more numerous Whiskered Tern Chlidonias hybrida, and that the population is more or less stable, with fluctuations between the years, that are normal for many other colonial breeding species on Skadar Lake. There are three standard locations of the colonies: Crni Žar (with up to 50 bp), Šarova topola (with around 30 bp) and Bakine tigle (with around 15 bp) (N. Vešović Dubak pers. comm.). Also the observations in 2008 and 2009 and later on in 2017 referred to similar size of the breeding population and the general locations of the breeding colony on the lake (CZIP/EuroNatur Database, Mihelič et al. 2017).

Results and discussion

The fluctuation of the numbers of breeding Common Terns are even more evident in Ulcinj Salina. The population in Ulcinj Salina depends on the stable water regime, making the islets in largest salina's pools inaccessible to land predators. Due to the problems in the site management, the situation in Ulcinj Salina is unfortunately not predictable lately, affecting the breeding numbers (and even more so the breeding success) of both tern species. In 2016-18 only 1 to 11 bp bred in Ulcinj Salina (Sackl et al. in prep.). The population used to be larger and more stable with 5 to 80 bp (20 on average) in the past few decades (Sovinc et al. 2017). A small number of the birds nesting on Skadar Lake visit the lower reaches of the Morača River for foraging during and after the breeding season, while the Ulcinj Salina breeding population forage on a daily basis in the sea in front of Velika Plaža and Ada Island in Bojana Delta. Individual birds can be observed along the Montenegrin coast especially during summer, but nowhere in larger numbers. Everywhere else in Montenegro Common Tern is a rare and accidental bird.

The three sites where Common Tern reaches C6 criteria for SPA selection are:

- Skadar Lake with 50 to 100 breeding pairs
- Ulcinj Salina with 1 to 80 breeding pairs (20 bp on average during the last decade)
- Bojana Delta with 50 to 300 resident individuals feeding along Velika plaža and Ada Island during and after the breeding season

@R.Mihelič

@P.Sackl

Sandwich Tern
Thalasseus sandvicensis

CRITERIA TRIGGERED: *C6 (15i)*
STATUS: M, W
POP. MNE: 500i stopping over during spring migration, up to 200i wintering
% OF POP. IN PSPA: 100%
N OF PSPA WITH OCCURRENCE: 4

Sandwich Tern is an all year non-breeding visitor of the Montenegrin coast. Reiser & Führer (1896) saw the species in small numbers all along the coast, with larger flocks at the end of Feburary/beginning of March. It seems that this pattern has remained similar until today. Still individual birds or small flocks can be observed along most of the Montenegrin coast, practically all year round. However, the species is significantly more numerous in winter and during spring migration. The main concentrations of Sandwich Terns in the country are known from the Bojana Delta. In winter numbers range from 3i (2013) up to 286i (2011). Daily counts during spring migration on Ada Island, since 2010, amount at annual minima of 510 – 620 of resident birds or migrants that pass the delta front in March and early April (IWC database, Sackl et al. 2014, 2017). Although regularly present all along the coast, the species is with the exception of the Bojana Delta nowhere else numerous enough to trigger C6 criterion. In Tivat Salina regularly up to 10 birds can be seen (CZIP database) as well as in Buljarica and in Kotor Bay, where the birds mostly rest on buoys used for the growing of black mussels (B. Rubinić, unpubl.). Sandwich Tern is also an exceptional guest in all inland wetlands, including the very close-to-sea Ulcinj Salina (Euronatur/CZIP database).

The only site where the species triggers C6 criterion for SPA identification:

- Bojana Delta with 500 – 600i in spring and up to 200i overwinter

@M.Kose

Eurasian Pygmy-owl
Glaucidium passerinum

CRITERIA TRIGGERED: *C6 (5 bp)*
STATUS: B
POP. MNE: 500 to 1.000 bp
% OF POP. IN PSPA: 80%
N OF PSPA WITH OCCURRENCE: 8

Nither the bird researchers of the 19th nor the majority of 20th century ornithologists list Eurasian Pygmy-owl as a breeding bird species for Montenegro (i.e. Reiser & Führer 1896, Vasić et al. 1990). At the beginning of the 21th century the estimated population for Montenegro was at 3 - 5 bp (Puzović et al. 2002), but the basis for this estimate is not known. However, a male that was heard on 2 May 1978 in the Bjelasica area, N of Kolašin, constitutes the first record of Eurasian Pygmy-owl in the country (Rašajski & Gavrilov 1983).

Since then only a handful of records were collected until 2016: On 10 June 2012 a male was heard singing in a spruce forest above the village of Kovren at an altitude of 900 m a.s.l. This observation still remains the lowest recorded altitude in Montenegro. Additionally, two males were heard close to Zminje Lake on Durmitor on 1 October 2014 (Shurulinkov & Fedchuk 2015) and a further specimen responded on tapes of male song near Kruševo in Ljubišnja on 10 October 2014 (D. Radišić, unpubl.). Another bird was heard in Šaranci on Durmitor on 25 July 2015 and 2 separate males were heard near the village of Boljanići, some 15 km NW of Pljevlja (M. Jovićević, unpubl.). Finally, a singing bird was heard in Katunište on Zeletin Mountain on 4 September 2017 (M. Šoškić, unpubl.). These are virtually all known observations of Eurasian Pygmy-owl in Montenegro before the start of field surveys for the present study in.

Because the birds of the Montenegrin mountains are least known, the main goal of field surveys for the identification of SPAs was the bird fauna of the alpine forests. Here also Pygmy Owl was a focus species. However, due to limited resources, we decided to survey the species along with other target species, particularly, while surveys of the leks of Capercaillies in April and May, and during surveys of Hazel Grouse and woodpeckers in autumn. Altogether, between 2016 and 2018, 65 records of the

species were collected, all of it in the northern, alpine region of the country. The lowest altitude where we found the species was near Kosanica at 1.170 m a.s.l. in Kričak, and the highest at 1.973 m a.s.l. next to Hridsko Lake in the Prokletije Mountains.

A very basic assessment of the data collected over the past years shows that in Montenegro Eurasian Pygmy-owl inhabits coniferous and mixed forests between 1.000 m and 2.000 m a.s.l., with the majority of obsdervations between 1.300 and 1.700 m a.s.l. Pygmy Owl inhabits forests dominated by different coniferous trees, most commonly Norway Spruce (Picea abies), Silver Fir (Abies alba) and Scots Pines (Pinus silvestris), which are the most common conifers in these areas. Pygmy Owls were also found in forests of Bosnian (Pinus leucodermis), Black (P. nigra) and Macedonian Pines (P. peuce).

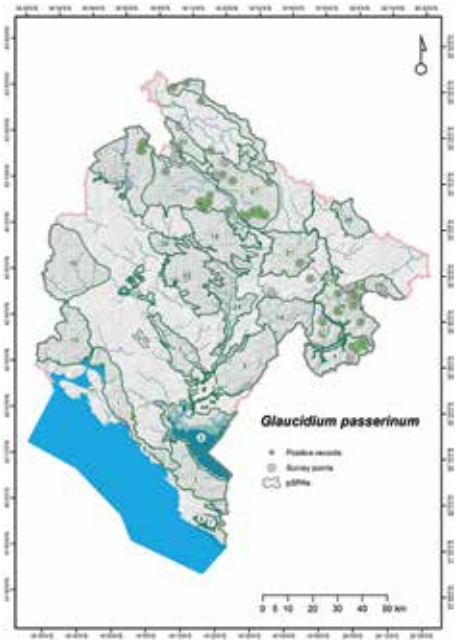


Figure 11: Survey points and positive records of the surveyed Pygmy Owl *Glaudicium passerinum* in 2017 and 2018.

The species is most abundant in Kričak pSPA where the area of suitable habitat is by far the largest. The area covered by 250 km² of extensive coniferous and mixed forests, intersected with numerous gaps and clearings which constitute prime habitat for the boreal owl species. In this area 17 singing males were recorded during spring and autumn surveys. Based on the species' density in the actual surveyed area and the area of suitable habitat we estimate a total of 169 to 338 bp for the whole pSPA. The same approach was used for other areas.

Based on habitat modelling Montenegro may recently hold a hitherto unknown population of 500 – 1.000 bp of Eurasian Pygmy-owl. Habitat models further indicate that around 80% of the species' habitat lies within the borders of the identified pSPAs.

It is, finally, rather strange that the species was overlooked by thorough observers like Reiser & Führer (1896) who have spent a substantial time in the boreal forests of N Montenegro and have recorded practically all other boreal bird species of the country, even the more elusive ones. It seems therefore likely that the species has colonized Montenegro most recently. May be Eurasian Pygmy-owl colonized Montenegro from Bosnia and Herzegovina where the species was recorded by Othmar Reiser in the beginning of the 20th century (Reiser 1939).

Population estimates in different survey areas with the five best areas for Eurasian Pygmy-owl in Montenegro (in bold), triggering C6 criterion, according to current knowledge:

PSPA	POPULATION	
	MIN	MAX
Kričak	**169**	**338**
Šekular, Mokra, Cmiljevica	**59**	**119**
Durmitor	**57**	**114**
Visitor and Zeletin	**44**	**88**
Ljubišnja	**33**	**67**
Piva	25	49
Prokletije Mountains	24	47
Bjelasica Mountain	7	14
Total pSPA	418	835
Total Montenegro	**500**	**1.000**

@T.Mihelič

Boreal Owl
Aegolius funereus

CRITERIA TRIGGERED: *C6 (5 bp)*
STATUS: B
POP. MNE: 600-1.200 bp
% OF POP. IN PSPA: 80%
N OF PSPA WITH OCCURRENCE: 10

In the 19th century Boreal Owl was recorded only once on Durmitor Mountain: a singing male was heard near Žabljak on 26 July 1896 (Reiser & Führer 1896). During the 19th century few ornithologists visited the mountains of Montenegro, hence, records are scarce. A male that was heard on Durmitor near Crepulj Poljane on 11 July 1987 is one of the few records from the last century. The population estimate by Puzović et al. (2002) of 40 - 100 bp for Montenegro for the early 21th century is probably based on the assumption that the species might inhabit similar habitats in similar densities as in nearby areas in Serbia that have been slightly better researched. Boreal Owl was one of the focus species of a first systematic research on the birds of Durmitor National Park in 2010 that arise with a population estimate of 6 - 13 bp (Saveljić & Rubinić 2010). The, so far, most significant effort to reveal the distribution and numbers of Boreal Owl in Montenegro was made between 7 and 11 October 2014 by a group of Serbian and Montenegrin bird experts (D. Radišić, unpubl.). During this survey 41 territorial males were recorded in four surveyed areas in N Montenegro: Hajla (10), Prokletije (2), Ljubišnja (15) and Durmitor (14 males).

Like for the majority of birds from Annex I of the EU Birds Directives, special attention was given to Boreal Owl during mountain forest surveys in the framework's present field work in 2017 and 2018. Due to capacity and time limitations only a few playback surveys could be organized for Boreal Owls. Therefore, the majority of records were collected during surveys of other species (mostly during Capercaillie lek surveys). Undoubtedly, playback surveys will result in a more complete picture of the species' distribution and abundances. However, during our surveys 42 Boreal Owls were recorded in different areas of N Montenegro. According to its name, throughout most of its range Boreal Owl inhabits boreal forest habitats. Also in Montenegro the species was found only in boreal coniferous and mixed forests at elevations between 1.076 and 2.107 m a.s.l., with the majority of birds recorded between 1.300 and 1.700 m a.s.l. The species is usually associated with Norway Spruce (Picea abies),

Silver Fir (Abies alba) and Scots Pine (Pinus silvestris) which are the most abundant conifers in N Montenegro, but the species was also present in almost pure stands of Macedonian (Pinus peuce), Bosnian (P. leucodermis) or Black Pine (P. nigra). In general, the habitat of Boreal Owl in Montenegro overlaps with the habitat of Eurasian Pygmy-owl (Glaucidium passerinum) and Three-toed Woodpecker (Picoides tridactylus).

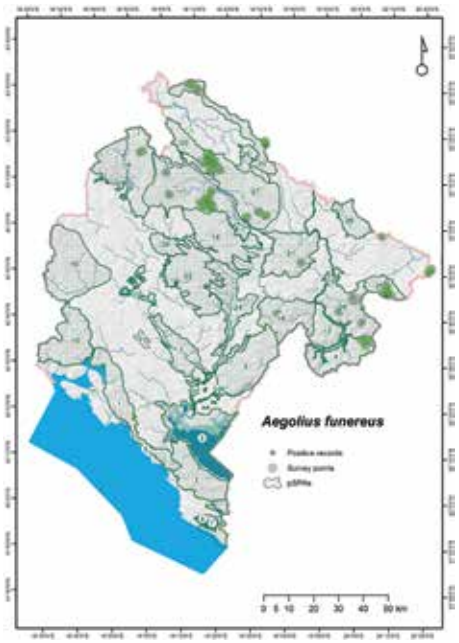


Figure 12: Survey points and positive records of the surveyed Boreal Owl *Aegolius funereus* in 2017 and 2018.

Similarly to Eurasian Pygmy-owl, Boreal Owl is most abundant in Kričak SPA which harbours the largest complex of boreal forests in Montenegro. Following to the better knowledge of the habitats and avifaunistic characteristics of the area, the current population estimate for the Durmitor Massif is considerably higher than the estimate in 2010. The population densities which found in Montenegro correspond quite well with new data on densities in nearby Kopaonik National Park in Serbia who harbours habitats which are very similar to the majority of areas inhabited by Boreal Owl in Montenegro (Rajković et al. 2013). The mean of the ecological density (density in suitable habitats within the area in question) in Montenegro is calculated with 4.1 bp/10 km², with a minimum density of 1.5 bp/10 km² on Bjelasica Mountain and a maximum of 9.3 bp/10 km² in Kričak.

The migration patterns and vertical movements of Boreal Owlsa in the Balkans are insufficiently known. Nevertheless, despite some opposite data (Denac & Vrezec 2005) and assumptions (A. Vrezec, pers. comm.) on the species' possible movements, we assume that birds of the Balkan population are much more sedentary during autumn and winter than those in Scandinavia and N Europe (Pakkala et al. 1994). Therefore we consider that all autumn observations correspond with territorial birds and Boreal Owls and consider them as bp for population estimates. We estimated the total population in Montenegro to 600 to 1.200 bp, with around 80% of it living within the borders of the proposed SPA-network.

Population estimates of Boreal Owl in different survey areas, with areas where the species triggers C6 criterion shown in bold:

PSPA	POPULATION (BP)		POPULATION DENSITY BP/10 KM2
	MIN	MAX	
Kričak	**236**	**473**	**9,3**
Durmitor	**108**	**217**	**6,2**
Hajla	**61**	**122**	**8,4**
Šekular, Mokra, Cmiljevica	**28**	**55**	**2,5**
Ljubišnja	**22**	**44**	**2,8**
Prokletije Mountains	17	34	2,6
Komovi Mountains	7	15	2,1
Bjelasica Mountain	7	14	1,5
Piva	6	12	1,6
Total pSPA	**493**	**986**	**4,1**
Total Montenegro	**600**	**1.200**	

@B.Rubinić

Ural Owl
Strix uralensis

CRITERIA TRIGGERED: *C6 (5 bp)*
STATUS: B
POP. MNE: 50-100 bp
% OF POP. IN PSPA: ca. 30%
N OF PSPA WITH OCCURRENCE: 3

In the Western Balkans Ural Owl reaches the southern and south-eastern edge of its distribution area at the border between Montenegro and Bosnia and Herzegovina. Reiser &Führer (1896) mention the species in a complementary list of species whose occurrence in Montenegro is in doubt and whose presence has still to be documented by collected specimens. In their 'materials' on the bird fauna of the Balkan Peninsular they report only the sighting of a 'large grey owl', seen by L. v. Führer flying off from the top of a spruce in Njegoš Mountain in the west of the country on 25 June 1894. Following to the appearance of the bird and the vicinity of Njegoš Mountain to Bosnia and Herzegovina where the species was common at this time (and still is), they were relatively confident that the bird could've been an Ural Owl (Reiser & Führer 1896).

The mystery of the species' presence in Montenegro remained unsolved for more than a century. In recent years a number of ornithologists searched for the species systematically in areas that provide, according to experiences in neigbouring Balkan countries, adequate breeding habitats; e.g., in Biogradska Gora National Park (A. Vrezec & B. Rubinić, unpubl.), Durmitor National Park (Saveljić & Rubinić 2010) and on Orjen Mountain (Rubinić 2017). Although the species was always considered to be a potential breeding bird, its breeding population in Montenegro was estimated at 20-40 bp at the beginning of the 2000s (Puzović 2002), a direct proof of species' occurrence in the country was missing all the way until 2015. On 18 March 2015 M. Jovićević (unpubl.) made an audio recording of a male singing next to Karovića Poljana village below Kovač Mountain in the extreme NW of the country, in the borderlands to Bosnia and Herzegovina and Serbia.

Although during the field surveys in 2016 - 2018 special attention was given to the species throughout all forest habitats in Montenegro, both by spontaneous records and by using the

active playback method. In the frame of current field surveys Ural Owl was recorded only in the easternmost parts of the country, namely in Piva, Ljubišnja and in Kovač areas. Altogether 9 territories were recorded in 2017 and 2018, i.e. 5 on Ljubišnja Mountain, 3 on Vučje Mountain in Piva pSPA and one on Kovač Mountain, some 4 km SE from the location where the species was recorded in 2015. The habitat where Ural Owl was found in Montenegro is typical for the species in the Dinaric Alps of the Western Balkans. The species was mainly noted in Beech forests (Fagetum), mixed with Silver Fir (Abies alba), Norway Spruce (Picea abies) and other tree species between 1,300 and 1,700 m a.s.l. For a better understanding of the distribution and numbers of Ural Owl in Montenegro additional surveys in the areas with suitable habitats, in particular in the eastern part of the country, are needed. It is quite possible that larger populations are still undiscovered, i.e. in the Njegoš and Golija areas and in other forests in the extreme NW of the country.

According to current data we suppose that the species reaches C6 criterion in the following areas:

- Ljubišnja Mountain with appr. 20 occupied territories
- Kovač Mountain with 5 - 10 occupied territories
- Piva with at least 5 occupied territories

@B.Rubinić

@T.Mihelič

Eurasian Eagle-owl
Bubo bubo

CRITERIA TRIGGERED: *C6 (5 bp)*
STATUS: B
POP. MNE: 240 to 460 bp
% OF POP. IN PSPA: 50%
N OF PSPA WITH OCCURRENCE: >22

The 19th century bird researchers noted that, besides Scops (Otus scops) and Tawny Owl (Strix aluco), the Eurasian Eagle-owl is the most common owl species in Montenegro, distributed in all parts of the country. Reiser & Führer (1896) saw the species individuals or heard calling birds around Skadar Lake, on Kakaridska Gora near Podgorica, in the olive-tree groves in Val di Noce (Valdanos), and in Ćemovsko Polje. A number of accidental records of singing males, shot individuals, feathers and injured birds, mostly from the southern part of the country, in recent times indicates that the species is still common and widely distributed in Montenegro. Singing birds were heard on the coast close to Petrovac (Bordjan 2006 a), Budva (M. Šoškić, unpubl.), on Luštica Peninsula, Boka Kotorska (M. Šoškić, unpubl.), in Stari Bar (B. Blažić unpubl.), Sutomore (Grubač 2000) and in the Ulcinj area (P. Sackl, J. Hanžel, unpubl.). Additionally, a number of records are known from the vicinity of Skadar Lake (Ivanović 1970; M. Ružić, K. Paunović, P. Sackl unpubl.) and from Durmitor Mountain (D. Radišić unpubl.). At least 5 records of injured or killed birds were reported to CZIP during the period 2015-2018, all of them from the coast and the vicinity of Podgorica (CZIP, database).

To get a better overview of the species' distribution and population density as a basis for a systematic population estimate of Eurasian Eagle-owl in Montenegro, we organized surveys of singing (territorial) males in February and March, 2017 and 2018. With the help of 48 volunteers in 2017 we counted 19 territorial males on 35 vantage points at the slopes of the Rumija Mountain, Sutorina and in Cijevna canyon. In 2018, 63 volunteers counted 24 territorial males on 52 vantage points along the southern slopes of the Paštrovići and Lovćen Mountains, in Bjelopavlići and in Morača river valley. The results of the present surveys show that Eurasian Eagle-owl is indeed a very common, widely distributed owl species in Montenegro which locally can reach

very high densities. Thus, on the slopes of coastal mountains, i.e. Rumija, Paštrovići, Lovćen and Sutorina Mountain, calling males were often separated by only 2 km, quite often even lesser than that. In Lovćen and Paštrovići we noted 17 calling males on 20 vantage points (85%), while in 23 vantage points in the Rumija Mountains we found 12 males, i.e. a frequency of 52% of positively sampled observation points. Hence, population density in Montenegro is among the highest in Europe (Pérez-García et al. 2012) and about 3-times higher than in core distribution areas in SW Slovenia (Mihelič 2015), but comparable to densities at the Croatian coast where feeding conditions are most favourable (Barišić et al. 2016).

During the surveys in 2017 and 2018, we found minimal population densities between 1.64 and 6.41 bp/100 km^2 x study area and calculated mean densities of 4,03 – 5,65 bp/100 km^2 for the five best areas in Montenegro. Based on this data we estimated a total population for the country of 240 – 460 bp. In the 22 pSPAs, where the species was found, population densities range between 2,26 and 4,59 bp/100 km^2. Hence, according to population densities all 22 pSPAs harbour approximately 120 to 230 bp pairs or 50% of the national population.

To check the species' distribution and numbers in other areas, similar surveys like that in 2017 and 2018 are needed in other areas of Montenegro. Currently, we don't know enough on the species' ecology, threats and breeding success in Montenegro. It seems that the species favours open to semi-open landscapes with cliffs and steep mountainsides for breeding and mosaics of forests and traditionally used pasture- and farmland habitats as feeding areas. From the small number of specimens found injured or dead, we can generally conclude that the species is threatened by power-lines, traffic and illegal hunting.

The following table shows population densities and population numbers (calling males) in the five study areas, 2017 and 2018, where Eurasian Eagle-owl reaches threshold of criterion C6 for SPA identification:

PSPA	MIN	MAX	HA	DENSITY (CALLING MALES/100 KM^2)	
				MIN	MAX
Lovćen and Paštrovići	20	25	31.190	6,41	8,02
Rumija Mountain	13	15	27.792	4,68	5,40
Bjelopavlići Valley	10	15	20.575	4,86	7,29
Durmitor	10	15	60.946	1,64	2,46
Kučke Cijevna canyon	10	20	39.150	2,55	5,11
Population pSPA	**120**	**230**		**2,26**	**4,59**
Population Montenegro	**240**	**460**			

@M.Šoškić

Griffon Vulture
Gyps fulvus

CRITERIA TRIGGERED: *C6 (6 i)*
STATUS: M
POP. MNE: up to 20 i
% OF POP. IN PSPA: ca. 50%
N OF PSPA WITH OCCURRENCE: >10

Griffon Vulture was once a common resident in Montenegro. Breeding colonies existed in many parts of the country: Krstac above Kotor, Greda over Bar, Bratonožići, Zatrijebač in Cijevna canyon, on Ostroška Greda, Crvena Greda (Durmitor), and Vardar (Kučki Kom) (Reiser & Führer 1896).

Vizi & Vasić (1986) suppose that the last breeding was on a cliff above Dodoši, Skadar Lake. The breeding birds were destroyed through wolf poisoning in late 1960s. According to information of locals (Anonymous pers. comm.) a small breeding colony of Griffons existed close to Lisinj peak, Rumija Mountains, as late as the 1990s when the birds were poisoned by local shepherds who feared that the birds could attack their sheep. Although these claims seem possible, they were never confirmed by ornithologists.

Individual birds or small groups are commonly observed in different parts of the country; e.g. in Podgorica landfill 5 i in January 2001 as well as 3 birds in March 2001 (Saveljić 2001), and a single bird spent the night from 9 to 10 February 1992 in Vukurudu cliff in Cijevna canyon. The later bird was ringed, but the ring could not be read (Ljucović 1995). Most recently, on 29 October 2018 a satellite-tagged Griffon was shot in the Ulcinj Salina (CZIP database). The species is also commonly observed in Durmitor National Park, usually in late summer between July and August: 2i observed on 28 July 2000 on Sedlo, one in Dobri Do on 8 August 2004, one in Škrke on 22 July 2006 and one again in Dobri Do on 6 August 2008 (N. Stojnić, unpubl. data). Two further birds were seen flying over Boljske Grede towards the central massif of Durmitor, and later that day 2i above Bandijerna on 30 July 2001.; one circled above Prutaš, Durmitor, on 2 August 2001, one above Valoviti Do and Bandijerna, Durmitor, on 8 August2002, while, finally, one flew over Minin Bogaz on 29 July 2005 (D. Radišić, unpubl. data).

Individual birds are also observed in the S and central parts of the country; i.e., one bird photographed on 11 October 2011 in Pestingrad, Kotor (S. Popović, unpubl. data), and 2i flying above the city of Ulcinj in April 2003 (Euronatur/CZIP database). Recent studies of the movements of satellite-tagged birds show that there are probably two main routes used by Griffon Vultures in Montenegro. One is a coastal route, used mostly by birds that originate from Kvarner islands in Croatia that lead by following the coastline of the Adriatic and Ionian Sea from the N Adriatic region to N Greece. The direction of the other 'route' is less prominent and more radial and may basically represent the dispersal of birds originating from Uvac in S Serbia. The routes of these birds are either connected with the coastal route or spread in different directions from Uvac which is the population center of Griffons in the heart of the Balkans. The Uvac colony of 110 bp and 450-500 i (SRP Uvac 2018) which is one of the largest breeding colonies on the Balkan Peninsular, is only around 25 km away from the Montenegrin border. Therefore, Griffon Vultures are most probably regulary present in the border area to Serbia. As the home range of breeding adults is only up to 30 km in radius from nest-sites and daily distances range between 3 - 48 km from the breeding colony (Zuberogoitia et al. 2013, Garcia-Ripolles et al. 2011) the most suitable site for the regular occurrence of the species in Montenegro is probably Pešter Mountain, between 25 and 30 km from the Uvac colony. Regular occurrence in this area is reported through interviews with locals (D. Saveljić pers. comm.), but requires more focused research and stronger scientific evidence.

Vasić (1990) and Grubač (2015) believe that the species is a regular summer visitor of the Durmitor and Tara region. Between 1981 and 1987 usually individual birds or small groups, of normally 6 - 11i, with up to 18 birds, were seen between May and September (Grubač 2015). It seems that in recent times the groups are smaller, with individual Griffons and small groups regularly observed during migration or on foraging trips in Prokletije Mountains, Morača Canyon, Durmitor, in the vicinity of Nikšić and between Pljevlja and Bijelo Polje (Grubač 2015). A flock of 10 to 15 birds was observed feeding on a dead cow in summer 2015 (M.Zeković, pers. comm.). Due to the small number of reported sightings and low numbers, with current knowledge, it is not possible to identify any of the above listed areas as confirmedly important for the species. Further observations and especially data of satellite-tagged birds will provide better insights in the current occurrence of the species in Montenegro.

Currently the species can be arguably added to the list of qualifying species on:

- Durmitor, with few birds (max. 18i) regularly present during post breeding dispersal/migration

- Sinjajevina with up to 15 birds present during post breeding dispersal/migration

@B.Rubinić

Golden Eagle
Aquila chrysaetos

CRITERIA TRIGGERED: *C6 (2 bp)*
STATUS: B
POP. MNE: 41 – 67 bp
% OF POP. IN PSPA: 85%
N OF PSPA WITH OCCURRENCE: 21

Golden Eagle is a particularly emblematic bird species with a wide distribution and, as it seems, a rather stable breeding population in Montenegro. It breeds in all parts of the country, from the coastal mountains to the river canyons and mountains of the central and northern parts of Montenegro. All 23 nests that were found until today in the country (several of them, obviously, belonging to the same pair) are located in cliffs, altitudes ranging from 165 m a.s.l. on Skadar Lake to around 2.000 m a.s.l. on Durmitor. Like in other parts of its distribution area, Golden Eagles nest in river canyons and mountain cliffs, while the main hunting areas encompass more open landscapes of mountain plateaus (pastures, maquis, traditionally used mosaic landscapes) that overlook the river canyons, mountain slopes or more rarely wider river valleys and lowland farmlands. Because the species hunts different animals, the availability of different prey animals for food seems not to be the main limiting factor for its presence. Thus, in Serbia and the former Yugoslav Republic of Macedonia, Golden Eagles hunt land tortoises Testudo hermannii and T. graeca that represent around 40% of the prey during the breeding season. The rest are Eastern Hedgehogs Erinaceus concolor, Pine Martens Martes martes, Domestic Cats, lizzards, Rock Partridges Alectoris graeca, etc. (Grubač 1998). Besides food, the main conditions for the presence of Golden Eagle are large undisturbed areas away from human habitations and steep cliffs and mountainsides suitable for nesting (Grubač 1998).

Golden Eagle is known as a relatively common species since the 19th century (Reiser & Führer 1896). In contrast to other eagles, that have bred in Montenegro at that time and that are extinct now as breeding birds in the country, i.e. Eastern Imperial Aquila heliacal, Lesser Spotted Clanga pomarina and White-tailed Eagle Haliaetus albicilla, the species remained a relatively abundant breeding species. A few nest-sites which Reiser & Führer (1896) described in 'Ornis balcanica',

for example, a nest on the W side of Skadar Lake, are still existing and used by Golden Eagles in exactly the same locations as more than 120 years ago!

In comparison to recent data, population estimates of 15 - 25 bp for Montenegro by V. Vasić (in Grubač 1998) and of around 20 bp by S. Marinković (in Génsbøl 1995) from the end of the 20th century seem to be low. But, however, it may be possible that the population has recovered following to less frequent persecution and poisoning over the last years.

Abundant published and unpublished information and focused field surveys in 2017 and 2018 when about 30 days were spent to locate nesting areas, have provided us with a relatively good understanding of the distribution and numbers of Golden Eagle in Montenegro. In all, a minimum of 40 nesting territories were identified, with around 16 territories for which the species' breeding status could be properly documented. Given that roughly two thirds of the country harbours suitable Golden Eagle habitat, the population density in Montenegro is estimated at 0.4 - 0.6 bp per 100 km², what is comparable to the density in other Balkan countries and elsewhere (Grubač 1998). Golden Eagles breed in or close to 21 potential SPAs, while as much as 85% of the population breeds within the boundaries of proposed SPAs.

Below a comprehensive overview of Golden Eagle population estimates (in bp) are given for all proposed SPAs. Note that specific nesting locations are not provided due to the species' sensitivity to nest robbery and persecution.

The five most important areas where the species qualifies for designation of SPAs, are given in bold, areas that don't qualify as SPAs are shown in italics:

PSPA	POPULATION	
	MIN	MAX
Bjelasica Mountain	1	3
Bjelopavlići Valley	2	3
Bratogošt	1	2
Durmitor	**4**	**6**
Hajla	0	1
Morača Canyon	**5**	**8**
Komovi Mountains	0	1
Kuči and Cijevna canyon	3	3
Ljubišnja	0	1
Moračke Mountains and Maganik	0	1
Orjen Mountain	**3**	**4**
Lovćen and Paštrovići	**3**	**5**
Pešter	1	1
Piva	**3**	**4**
Prokletije Mountains	2	3
Kričak	0	1
Rumija Mountain	1	3
Sinjajevina	0	1
Skadar Lake	1	3
Visitor and Zeletin	2	2
Bukovica Valley and Vojnik Mountain	**4**	**4**
Njegoš Mountain	2	3
Komarnica canyon	1	1
Draga canyon	1	1
Petnjica	0	1
Novakovića gorge	1	1
TOTAL	**40**	**66**

@P.Sackl

Western Marsh Harrier
Circus aeruginosus

CRITERIA TRIGGERED: *C6 (5 bp, 15 i)*
STATUS: B, M, W
POP. MNE: 20 – 40 bp
% OF POP. IN PSPA: >90%
N OF PSPA WITH OCCURRENCE: >10

Western Marsh Harrier is an all year-round resident but a rare breeding bird in Montenegro. The species is more common accross the whole country during migration and in a few areas also during the wintering period. Historically Western Marsh Harrier is known to breed in three areas: In the late 19th century a nest was found on the left bank of Zetica and the species was otherwise regarded as a common breeding bird on Skadar Lake as well as in Zogajsko Blato (now Ulcinj Salina) and in Komanski Lug, now known as Mareza and marshes along the Matica River (Reiser & Führer 1896). The current status of the species is not clear in Mareza because after the construction of the main road Podgorica – Nikšić during the 1970s which cut the core marshlands in two halves, the species' breeding is unlikely.

However, marsh harrier remains a breeding bird on Skadar Lake where the population is estimated at 20 - 30 bp (D. Saveljić & M. Jovićević, unpubl. data). Skadar Lake harbours the most extensive reedbeds in Montenegro, the species' main habitat. Therefore, Western Marsh Harrier is abundant on Skadar Lake also during winter. According to January counts the winter population on Skadar Lake currently fluctuates between 20 and 50 birds (IWC database). A maximum of 300 birds which were estimated in winter 2003/04 is probably an overestimation (A. Vizi, unpubl. data).

A small breeding population, in the early 2000s estimated at 2 – 4 bp, exists also in the Bojana Delta (Schneider-Jacoby et al. 2006). Here the birds are known or supposed to breed in the more extensive reedbeds of the area, namely on Šasko Lake, on Ada Bojana and in the marshlands surrounding the Ulcinj Salina. In recent years, 2015 – 2017, at least a single bp nested in more extensive patches of isolated reedbeds in the salina itself. Together with 2 – 3 bp in adjoining marshlands breeding numbers in the Bojana Delta may be currently estimated at 5 – 7 bp.

Furthermore, Western Marsh Harrier is a regular migrant and winter visitor in the Ulcinj area. While the turnover of migrants in the Ulcinj Salina may be rather high, during spring migration between 15 – 75 i per year (median 61 i) were counted during a study of visual bird migration on Ada Island, 2010 – 2015.

Because the former numbers concern only birds which pass the area in March and early April the real numbers of migrants in the Bojana Delta are much higher (Sackl et al. 2014, 2017). At the same time a minimum of 5 – 10 birds, with up to 30 i during the floodings in January 2015 with exceptionally large numbers of Common Coot Fulica atra, are present in the Ulcinj Salina in winter which makes the Bojana Delta one of the most important sites for the species in Montenegro.

Western Marsh Harriers are, obviously, present also in other areas in Montenegro during both, spring and autumn migration. Hence, while systematic censuses are missing, a couple of more areas may trigger SPA criteria.

Areas that trigger C6 SPA tresholds:

- Skadar Lake with 20-30 bp and up to 50 wintering birds
- Bojana Delta with an average of at least 61 migrants per year (maximum 73 birds in early spring 2013)
- Ulcinj Salina with up to 30 wintering individuals

Western Marsh Harrier's habitat on Ulcinj Salina pSPA, @I.Stojović

@B.Rubinić

Levant Sparrowhawk
Accipiter brevipes

CRITERIA TRIGGERED: *C6 (5 bp)*
STATUS: B
POP. MNE: 100 – 180 bp
% OF POP. IN PSPA: ca. 60%
N OF PSPA WITH OCCURRENCE: 10

The Levant Sparrowhawk received special attention from ornithologists and bird collectors in the late 20th century. Reiser and Führer (1896) devoted the species an extensive account in their fundamental work on the bird fauna of Montenegro. Because Levant Sparrowhawk was then, and remains till today, an 'exotic' species for European ornithologists, the authors took all efforts to explain its distribution, phenology and ecology in Montenegro. It is especially interesting that practically all what they described remains almost exactly the same nowadays, more than 120 years later.

Reiser & Führer (1896) report that the species can be found in rural valleys, close to water and rich with high deciduous trees. The highest altitude where O. Reiser found it was Sutorman pass (700 m a.s.l.). They have found Levant Sparrowhawks in the Skadar Lake basin, in Lješanska Nahija, on Lješko Polje, in Bjelopavlići valley, and along the whole coastal belt. They found nests in Beri (in a large Nettle Tree Celtis australis), below Garač Mountain (in a Monpellier Maple Acer monspessulanum), in Orja Luka (in an Oak Quercus sp.), and below Možura Hill in an olive-tree grove. Furthermore, they noted spectacular numbers at the beginning of the autumn migration period, when they counted an overall total of more then 300 birds over Podgorica between 23 and 25 August 1894. The species was further observed in Goričani (Lower Morača River), Rijeka Crnojevića, Bar, Kruče, below Možura Hill, and in Ulcinj, and collected (shot) individuals on Ostrog, in Kurilo, Goričani, Orja Luka, Beri, on Sutorman Pass, and in Kruče (Reiser & Führer 1896).

The species' presence was confirmed in all of these localities by recent accidental observation as well as during our field work. But no current information on autumn and spring migration exists.

Due to the species' relative rarity and the need for further surveys, in particular of areas that were not systematically surveyed in the past, some of the currently published and unpublished observations are mentioned below:

On 12 July 1969 Levant Sparrowhawk was found to breed on Šasko Lake and was subsequently observed in the same site between 1972 and 1977. The species was further noted close to the Ulcinj Salina on 24 July 1974 and in Štoj on 14 May 1977 (Vasić 1979). In addition, Vizi & Vasić (1986) registered the species in the following localities: Rijeka Crnojevića on 15 May 1985, Lješanska Nahija on 24 May 1982 and in Mataguži in August 1983. A family of 2 ad. and 3 fledged juveniles was observed in Buljarica on 27 and 28 July 2003 (Radišić 2003).

A juvenile was also observed in Komarno near Virparzar on 30 July 2002, a female on Velika Plaža on 7 August 2006, a pair in Martinići on 3 May 2008, and one male in Čevo on 8 May 2008 (B. Rubinić, unpubl.). T. Basle (unpubl.) observed a pair on 30 April 2017 in a Sweet Chesnut (Castanea sativa) forest near Arbnež, below Rumija Mountain. In Spring and summer 2003, during a rapid assessment of the biodiversity of the Bojana Delta, single birds and pairs were seen in Ulcinj, on Ada Island, Stjo, in Mala Kneta, Reč, in the Ulcinj Salina, Bijelo Polje, in Donja Kležna (courtship displays) and Saško Brdo (Schneider-Jacoby et al. 2006). During later visits of the Ulcinj area since 2003 and breeding bird surveys in the Ulcinj Salina since 2016 the species is annually seen in riverine forests near Paratuk Island and in the Ulcinj Salina, with a propable nesting site shortly outside the salina (Euronatur/CZIP database). Additionally, on 13 July 2017 two not yet fully fledged chicks were found in a big Nettle Tree in Mojanovići (Zeta), after one of them fellout of the nest (B. Prakljaćić, pers. comm.).

In contrast to the former areas, very few observations exist outside the S parts of the country. We know of only one male which was observed in Volušnica, Prokletije, on 17^{h} August 2011 (N. Stojnić, unpubl. data).

Apart from the observations, listed above, a number of additional records were collected during the field work in 2017 and 2018. Together with occasional records that are published on online observation platforms a total of 57 records are currently available for the species.

Due to the dispersed distribution and comparably secretive behaviour the species is not easy to survey. The majority of records are therefore occasional observations or records from surveys of other species. However, after considering different climatic, topographical and habitat attributes these observations provide a relatively good picture of the distribution, abundance and ecology of the species in Montenegro. The records show that Levant Sparrowhawk occupies mainly the lowlands of S Montenegro (exclusively Mediterranean biogeographic region) and prefers more open landscapes with mosaics of hedges, orchards, small villages, loose foresta and scrublands, usually close to water and human habitations as it was already described by Reiser & Führer in the 19th century. While a total population of 100 – 180 bp is a first and rough estimation for the country, the past and current presence of the species confirms that the traditional landscape has been largely preserved across its distribution area.

The five most important areas where species reaches the SPA threshold under C6 criteria:

- Bojana Delta with a breeding population estimated at 11-40 bp (Schneider-Jacoby et al. 2006). Following to the lack of more exact data but continuous observations in different locations within the pSPA, we further stick to this population estimate
- Bjelopavlići Valley with 15-25 bp
- Skadar Lake with 15-20 bp
- Rumija Mountain with 10-15 bp
- Lovćen and Paštrovići also with approximately 10-15 bp

@B.Rubinić

European Roller
Coracias garrulus

CRITERIA TRIGGERED: *C6 (5 bp)*
STATUS: B
POP. MNE: 15 bp
% OF POP. IN PSPA: 100%
N OF PSPA WITH OCCURRENCE: >5, but breeding only in 2

European Roller has undergone large population declines in Europe over the last 100 years and Montenegro is, unfortunately, no exception to that trend. Because the breeding numbers increased and expanded its range in W Europe in the past 25 years, the species conservation status was recently downlisted to Least Concern in the IUCN Global Red List, but European Roller has lost the majority of its breeding range in Central and SE Europe (BirdLife International 2018b).

According to Reiser & Führer (1896), in the 19th century the species was a common breeding bird in the lowlands around Zogajsko Blato which is now the Ulcinj Salina. The riverine and lowland forests with mature woodlands rich in dead trees and hollow trunks provided prime breeding habitats. Hence, the species bred in "large numbers" in the area (Reiser & Führer 1896). From the 20th century data on European Rollers in Montenegro is scarce. Scattered birds were seen in Ćemovsko Polje and near Tuzi (O. Vizi, unpubl.; Boswall & Dawson 1975), near Kotor, in Ulcinj (Boswall & Dawson 1975) and on Šasko Lake (O. Vizi, unpubl.). A male and a female were killed for a museum collection near Zetica, a tributary of Skadar Lake on 10 August 1965 (Ivanović 1970) and the species was also recorded along the Morača River in 1986 (Vizi 1986). In conclusion, although the species was not particularly rare, it was not a common breeding species.

Since the 2000s more attention was paid to the species. In 2003 Schneider-Jacoby et al. (2006) estimated the population in the Bojana Delta at 9 - 15 bp, including 2 bp that

bred close to the northern edge of the Ulcinj Salina (cf. also Stumberger 2012). In 2008 a pair was confirmed to nest in a Eurasian Aspen (Populus tremula) in Buljarica (Saveljić 2008), but, although the site was controlled regularly, the species was never recorded again in the area. In the Bojana Delta, since 2003, nesting was confirmed in Gornij Štoj, Spatula, i.e. in the hinterlands of Velika Plaža, in Sv. Nikola, in the riverine forests close to Paratuk Island, in Zogaj and in the Ulcinj Salina (Euronatur/CZIP database).

In 2006 a group of Slovene and Austrian ornithologists installed 12 nest-boxes for rollers on electricity in the Ulcinj Salina. During the following years many nest-boxes were deliberately damaged, but damaged boxes were regularly replaced by new boxes by the same Slovene-Austrian ornithologists and by Montenegrin conservationists from CZIP. Despite heavy disturbances and further deliberate damage of nest-boxes, in 2008 2 bp bred in nest-boxes inside the saline and the population slowly increased to a maximum of 9 bp in 2016. In 2013, after a number of new boxes were installed in winter 2012/13, a maximum of 13 bp nested in the salina. There is some evidence that the increase of breeding numbers in the salina derives from the attraction of the nest-boxes to birds that formerly used natural nest-sites outside of the salina. Aside of the concentration of the birds in the salina, overall population size in the Bojana Delta are unchanged or have slightly decreased over the last 10 – 15 years. Before continuing the nest-box program, possible negative effects, like increased predation risk from concentrating the population in a relatively small area, should be discussed.

Currently, the Bojana Delta and, in particular, Ulcinj Salina is the only breeding area of European Roller in Montenegro. With more than 5 bp the species surpasses in the Ulcinj Salina the C6 criterion for SPA identification. Outside the salina an additional 2 - 3 bp are known from different localities throughout the Bojana Delta (Euronatur/CZIP database). Aside of the Ulcinj Salina and the Bojana Delta around 100 additional next-boxes were installed by CZIP between 2013 and 2015 in potential breeding habitats in Crmnica, Sušica Valley, and Ćemovsko Polje. An adult European Roller was seen sitting next to one of the nestboxes on a low-voltage electric pylon in Ćemovsko Polje on 30 April 2017 during field work for the present project, but no birds were observed when the area was revisited a couple of times later.

The only site where the species triggers C6 criterion:

- Ulcinj Salina with up to 13 bp and 70 youngs fledged from artificial nest boxes in 2018 (Energetski Portal RS 2019)

@P.Sackl

Common Kingfisher
Alcedo atthis

CRITERIA TRIGGERED: *C6 (5 bp)*
STATUS: B
POP. MNE: 140-200 bp
% OF POP. IN PSPA: 90%
N OF PSPA WITH OCCURRENCE: >14

Common Kingfisher is a widely distributed and well known species in Montenegro. In the 19th century Reiser & Führer (1896) recorded the species on many smaller tributaries of Skadar Lake, on the lake itself, and among others on the Morača, Ribnica, and Zetica River. Later it was observed in a number of other locations throughout the country: i.e. in Cijevna River (B. Rubinić, unpubl.), Piva River (Vučković & Vizi 1977), Lim River (M. Šoškić, unpubl.), in Komarnica River and even on Crno Lake and Otoka stream in 1.420 m a.s.l. in Durmitor National Park (N. Stojnić, unpubl.). 10 bp were estimated (field work was conducted after breeding in July 1988) along the Tara River (Vizi 1990). Nesting was recorded on the Bojana River, where the breeding density appears to be comparably high, as well as along the outer channel and Porta Milena in the Ulcinj Salina (Vasić 1979). In 2003 – 2004, Schneider-Jacoby et al. (2006) estimated the breeding population in the Bojana Delta at 9 - 30 bp., and between 2008 and 2016 the presence of the species during the breeding season was confirmed in many locations along the Bojana River; like Paratuk Island, Reč, Sv. Nikola, Sv. Đorđe, Fraskanjel, Štodra, and Ada-Bojana (Euronatur/CZIP database). Similarly, Common Kingfisher was recorded during the breeding time in many locations along the banks of Skadar Lake; e.g., Rijeka Crnojevića, Virpazar, Bobovište, Krnjice, Godinje, Vranjina. And the species is further known from Tivat Salina (Sackl et al. 2006; Euronatur/CZIP database). In the frame of the IWC Common Kingfisher is present on all coastal wetlands in winter. With maxima of up to 22i Skadar Lake is one of the most important wintering areas for the species in Montenegro. According to IWC data also Zeta River harbours significant numbers, but the species is absent on other inland wetlands in winter. But, in particular, smaller rivers and streams, where in other countries the species is known to winter, are not counted (IWC database).

The distribution and abundance of Common Kingfisher in Montenegro was not investigated systematically. The only site with good population estimate is the Zeta River in Bjelopavlići pSPA that was surveyed systematically on 29 April 2017. A count along the Zeta River by kayak between Glava Zete and Danilovgrad (i.e. about half of the river length flowing through) yielded 16 bp (territories) of Common Kingfisher. Taking into account the remaining unexplored length of Zeta River and its smaller tributaries, where the species might also nest (e. g., Sitnica, Sušica, Mareza, etc.) we estimate the total population for Bjelopavlići pSPA to 30 - 40 bp. With an estimated 50 bp on Skadar Lake, including its smaller tributaries, after Bijelopavlići Skadar Lake is the second most important breeding area of Common Kingfisher in the country, followed by the Bojana Delta and Lim Valley. Because the majority of rivers and streams in Montenegro are in good natural condition, with rich opportunities to build nesting burrows along their banks, with good water quality, high visibility and with high abundances of little fish, the species' main prey, Montenegrin watercourses provide prime habitats for nesting. Further surveys like that carried out in parts of the Zeta River are needed for better estimates of the breeding population of Common Kingfisher in the country.

Based on current knowledge the five best areas for Common Kingfisher in Montenegro, triggering C6 criterion for SPA identification, are:

- Skadar Lake with an estimated 30 - 50 bp
- Bjelopavlići Valley with 30 - 40 bp
- Lim Valley and Plavsko Lake with an estimate of 20 - 30 bp
- Bojana Delta with an estimated 9 - 30 bp
- Durmitor with up to 10 bp on Tara River

Common Kingfisher's habitat on Zeta river, Bjelopavlići Valley pSPA, @M.Kose

@U.Paal

Three-toed Woodpecker
Picoides tridactylus

CRITERIA TRIGGERED: *C6 (5 bp)*
STATUS: B
POP. MNE: 1.300 – 2.600 bp
% OF POP. IN PSPA: ca. 80%
N OF PSPA WITH OCCURRENCE: 11

Three-toed Woodpecker was seen only twice by L. v. Führer in Montenegro at the end of the 19th century: once on Durmitor and once in the Komovi Mountains. Very interesting is, however, the record of the only specimen in the collection of Princ Danilo that was shot during wolf hunting on Lovćen Mountain in S Montenegro (Reiser & Führer 1896). So far, this is the only record of Three-toed Woodpecker in the Mediterranean part of the country. As well, later observations of the species, during the 20th century, are very scarce. The species was said to be a regular breeding bird in boreal coniferous forest of the Durmitor massif, descending to mixed broad-leaf forests in autumn. But only a single bird has been reported in Tara canyon on 27 November 1981 (Vasić et al. 1990). Also other researchers of the bird fauna of Montenegro and the Balkan Peninsular, in general, considered Three-toed Woodpecker as a rare and threatened species which is confined to old-growth coniferous forests that are increasingly cut. In particular, Matvejev (1976) recorded Three-toed Woodpecker on Hridsko Lake in the Prokletije Mountains and on Visitor Mountain.

The species occurrence in Montenegro remained little known also during the beginning of the 21st century. The only site where the species was continuously observed, between 2000 and 2010, is Durmitor National Park where N. Stojnić (unpubl.) noted it in Otoka, near Mlinski Potok, on Crepulj Poljana and near Crno Lake. Additionally, a pair was observed near Crno jezero on 28 July 2004 (Steiner 2004). During a study of the birds of Durmitor National Park and surrounding areas, in 2010, the occurrence of the species was investigated with the playback method. Out of 45 survey points, where playbacks were applied, Three-toed Woodpecker was present in 5 or 11% of all observation points. Based on results of this research the population on Durmitor was estimated, in 2010, at 27 - 53 bp. But large areas in Šaranci and on the S edge of Tara canyon

where according to adequate habitat conditions high abundances of the species' are expected, were excluded from this assessment (Saveljić & Rubinić 2010).

Apart from the old record from Hridsko Lake by Matvejev (1976) the species was not recorded anywhere else in the Prokletije Mountains. In the Kosovo part of Prokletije the species was only reported from Kožnjar across Desni Meteh in Montenegro. Two nests were found in spruce forests on 1.650 m a.s.l. and 1.700 m a.s.l. (Grubač & Puzović 1999). In adjoining areas in Serbia Three-toed Woodpecker was found close to the Montenegrin border on Đerekarski Omar, i.e. near the extreme NE border of Montenegro, in April 2014 (Rajković & Radišić 2013/14), near Jabuka (Ostojić 2013/14) and in the forests of Mojstir (Sekulić 2013/14).

Figure 13: Survey points and positive records of the surveyed Three-toed Woodpecker *Picoides tridactylus* in 2017 and 2018.

Due to the general lack of data on one hand and the importance of the species as an indicator of old-growth coniferous forests on the other, we decided to pay special attention to Three-toed Woodpecker during the field work, in 2016 - 2018. The occurrence of Three-toed Woodpecker was studied by applying the playback method. In all, 277 pre-selected and opportunistically selected survey points, situated in suitable habitats, i.e. coniferous and mixed forests above 1.000 m a.s.l.) as well as in about 100 survey points in other forests for cross-checking the accuracy of habitat models, for the presence of the species. During these surveys a total of 157 breeding territories, indicated by drumming and/or calling males/pairs, were found in various areas in N Montenegro. All birds were noted in preselected observation points, situated in suitable habitats, and none outside. The minimum elevation where the species was recorded was in 1.098 m a.s.l. near the village of Mijakovići in Kričak pSPA and the maximum in 1.941 m a.s.l. a few kilometres N of Hridsko Lake in Prokletije National Park.

The woodpecker surveys in 2017 and 2018 confirmed that Durmitor Mountains, were 42 breeding territories were found, is the most important area for Three-toed Woodpecker in Montenegro. The core habitats of the species in Dumitor National Park of coniferous forests with high densities of matures trees with dead branches and hollow trunks in the Šaranci area and on the wooded ridge overlooking the Tara river canyon are well conserved. In Durmitor overall ecological density, i.e. the breeding density in habitats suitable for nesting, was calculated with 11 - 22 breeding territories/ 10 km^2. Consequently, given the surface area of forests suitable for Three-toed Woodpecker, of around 230.1 km^2 we estimated overall population size for Montenegro between 243 - 485 bp. Since Three-toed Woodpecker is a typical boreo-alpine species inhabiting old-growth coniferous forests with plenty of dead trees, infected by insects (Souček 2010), we believe that the main factor for very high population densities is the very high availability of dead tree mass. According to the National forest inventory up to 5.5% of all the trees in Montenegrin forests are dead and up to 4.2% are veteran (old growth) trees, summing to an estimated total 7.2 m^3 of dead tree mass per hectare, of which 3.4 m^3 are estimated constituting standing or dead branches that are particularly important for the species (Dees et al. 2013).

The population densities of Three-toed Woodpeckers in little-managed Montenegrin forests are at least 10- times higher than in managed forests in the western Carpathians in Poland, with 0.4 – 0.6 breeding territories/10 km² (Matysek & Kajtoch 2010), and at least three times higher than in the alpine region of Friuli-Venezia Giulia in Italy where densities rangre from 1.6 to 4.0 breeding territories/10 km² (Rassati 2014). In contrast, population densities are comparable with densities in Slovenia where in the best areas in the Slovenian Alps 8 - 10 breeding territories/10 km², about 5 territories/10 km2 in the Pohorje Mountains and between 2 and 6 breeding territories/10 km² were found in the Kočevsko area in the Dinaric Alps (Denac 2015). A strong link between high masses of dead trees and the presence of Three-toed Woodpeckers is futher evident from the species' distribution that differs from the distribution of other boreal bird species, like Boreal Owl, Eurasian Pygmy-owl and Hazel Grouse, which lesser depent on deadwood and snag trees. While the former species are most abundant in Kričak area, an area with the most extensive stands of boreal forests in the country, Three-toed Woodpecker is more abundant in the Durmitor Mountains and in Šekular, Mokra, Cmiljevica pSPA where the absolute coverage of boreal forests is smaller, but where the proportion of old-growth forests is considerably higher than in Kričak.

The following table shows the population density of Three-toed Woodpecker in different survey areas throughout the country, with areas triggering C6 criterion for SPA identification marked in bold:

PSPA	POPULATION ESTIMATE		DENSITY (PAIRS/KM²)
	MIN	MAX	
Durmitor	**243**	**485**	**11**
Šekular, Mokra, Cmiljevica	**187**	**375**	**9,6**
Kričak	**148**	**297**	**4,6**
Prokletije Mountains	**143**	**286**	**10,5**
Bjelasica Mountain	**71**	**142**	**4,8**
Sinjajevina	65	129	11
Piva	55	111	8,8
Ljubišnja	51	103	5,7
Hajla	45	90	5,8
Visitor and Zeletin	37	74	4,4
Komovi Mountains	27	54	1,5
Total pSPA	**1.074**	**2.145**	**6,6**
Total Montenegro	**1.300**	**2.600**	

@U.Paal

White-backed Woodpecker
Dendrocopos leucotos

CRITERIA TRIGGERED: *C6 (5 bp)*
STATUS: B
POP. MNE: 2,400 – 4,800 bp
% OF POP. IN PSPA: ca. 50%
N OF PSPA WITH OCCURRENCE: 15

Ludwig von Führer lists the species as common in higher (mountain) forests (Führer 1894), while his mentor Othmar Reiser believes that White-backed Woodpecker is not too common in Montenegro. During his travels in Montenegro L. v. Führer shot two individuals, one in Velo Polje under Komovi Mountains, and another bird on Lovćen or somewhere close to Cetinje (Reiser & Führer 1896).

In the 20th century the species was recorded during bird surveys in the Piva region in Komarnica, near Pivsko Oko and close to Plužine, supposedly in odd habitat of oak forests between 600 and 1,100 m a.s.l. In addition, an individual was shot in October 1974 in an oak forest close to Pivsko Oko (850 m a.s.l.) (Vučković & Vizi 1977). In the Durmitor Mountains White-backed Woodpecker is said to be a regular breeding bird of beech-spruce and beech-maple forests of the "mountain type". In such habitats the species was recorded in two localities: Mlinski Potok and Poljana under Dragišnica. The species was further reported as a characteristic species of the mixed forests at the edge of Tara river canyon, "with abundance of 23%", but the methodology is not presented (Pekić 1972, in Vasić et al. 1990, Vizi 1990).

Not much more was known about the species at the beginning of the 21th century. Again all records are mainly restricted to the Durmitor Mountains: Two pairs were seen in Sušica canyon on 1 May 2002 and one female on 6 May 2003 in the same place (N. Stojnić, unpubl.). In addition, one individual was observed in beech-spruce forests between Tepca and Ćurevac on 4 August 2004 (D. Radišić & M. Janković, unpubl.). During the research of the birds of the Durmitor Mountains in 2010 four breeding territories of White-backed Woodpeckers were registered in a total of 30 survey points (13%) by using the playback method. The population was estimated at 9 - 47 bp (Saveljić & Rubinić 2010), but bird surveys in Durmitor were mostly conducted in mixed forests that are lesser adequate for White-backed Woodpecker where the species is less numerous. A number of records were collected also around Biogradsko Lake in Biogradska Gora National Park

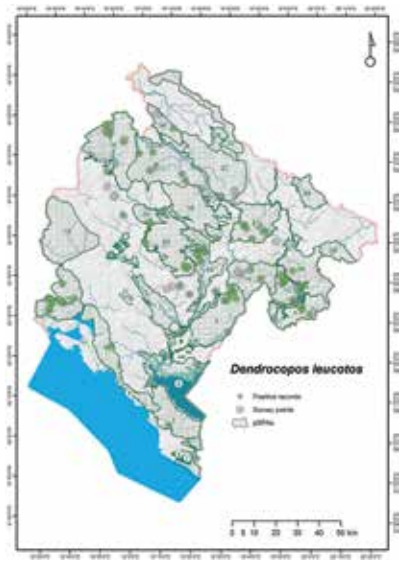


Figure 14: Survey points and positive records of the surveyed White-backed Woodpecker *Dendrocopos leucotos* in 2017 and 2018.

(Bjelasica pSPA) and in Crna Poda forest reserve in the Tara river canyon during occasional visits of the area by D. Saveljić (pers. comm.) and other bird researches.

The first focused assessment of the abundances of White-backed Woodpecker in an area with typical habitat for the species – mature Dinaric beech forests (Omphalodo-Fagetum) - was carried out on Orjen Mountain in SW Montenegro in 2016. Although this site is situated in the Mediterranean part of the country, due to high altitude and the orographic conditions an alpine climate prevails (Čikovac 2019). On 22 pre-selected survey points 11 - 13 territorial White-backed Woodpeckers (50% - 59%) were recorded, mostly in prime habitats of more than 100-year old beech forests with plenty of deadwood and hollow trees. The population of White-backed Woodpecker on Orjen Mountain was estimated at 81 - 95 bp (Rubinić 2016). But, for the study spatial information on habitat characteristics was not available, despite this calculations are based on serious survey data, the latter remains a first rough estimate.

During the fieldwork in 2017 - 2018 a lot of attention was given to White-backed Woodpecker, although due to time and capacity constrains, the surveys were not thorough enough to cover all of the most representative areas in the country. A lot of capacities are necessary for a nationwide survey because beech *Fagus moesiaca* forests cover more than 40% of all the forests in Montenegro (Dees et al. 2013) and by our experiences the vast majority of it are in condition suitable to host White-backed Woodpeckers. Over 60% of the surface area of the country are covered by forest with around 25% of the whole territory of Montenegro covered with different types of beech forests, which for a national survey would therefore need to be at least to some extent sampled for the presence and abundance the species. Many of these forests are not easily accessible. During fieldwork, in 2017 and 2018, White-backed Woodpecker was surveyed on 124 pre-selected and opportinistically-selected survey points across the country. The presence of the species was further investigated during surveys of Hazel Grouse in autumn 2017 and 2018. On this occasion we used playbacks of different species of woodpecker, including White-backed Woodpecker, which were applied on the same survey points (i.e., in >200 of 389 survey points) after the playback of Hazel Grouse was played. In this way, in more than 300 survey points 64 White-backed Woodpecker territories were recorded. Additionally, 31 records of the species collected randomly by different observers and published on on-line birdwatching platforms (E-bird, Observation.com, BirdTrack) were considered at some point in the present assessment.

In Montenegro White-backed Woodpecker is a species which is very closely linked to beech forests. The species was noted in different types of beech forests in a wide spectrum of altitudes. According to present survey data the species inhabits practically all the beech forest communities in the country: Fagetum montanum seslerietosum, Fagetum montanum montenegrinum, Fageto-Abietetosum, Piceto-Abieto-Fagetum montenegrinum and Piceto-Abieto-Fagetum subalpinum. White-backed Woodpecker was recorded at altitudes between 760 m a.s.l. (Manastir Morača in Morača canyon) up to 1.828 m a.s.l. in Desina Gora in the Bjelasica Mountains pSPA, with the majority of all records between 1.100 and 1.500 m a.s.l. Population densities of White-

backed Woodpecker varied between lower densities of 0.35 - 0.41 bp/10 km² in forests in which beeches constitute only a small portion of tree cover (i.e Ljubišnja, Kričak) up to 12.7 – 13.1 bp/10 km² in areas in which mature beech stands prevail – i.e. Morača Canyon, Bjelasica and Kuči Mountains. Low end densities in Montenegro are comparable to those in managed forests in the W Carpathians (Matysek & Kajtoch 2010), while high population densities are in comparison to the surface area of Montenegro are much more common and among the highest in Europe. Abundances of White-backed Woodpecker in Montenegro are comparable only d to densities in national parks, forest reserves and other protected areas in the Italian and Austrian Alps and in Latvian boreal forests (Frank & Hochebner 2001, Ruge & Weber 1974, Bergmanis & Stradz 1993, Frank & Hochebner 2001; all in: Denac 2013). The average densities in mixed forests in Montenegro with relatively low portion of beech or with good, yet limited stands of mature beech forests (i.e. Durmitor, Komovi, Orjen) vary between 3.5 bp/10 km² and 7.2 bp/10 km² and are, thus, comparable to abundances in the best areas for the species in Slovenia (Denac 2013).

Based on present data additional focused surveys are needed for the details of the species distribution in Montenegro, to identify areas with core populations and absolute abundances. There are for sure still vast underexplored areas in the country with in extensive beech forests that have never been investigated for White-backed Woodpecker which undoubtedly host significant populations of the species. These areas are mainly situated in extensive woodlands dominanted by beech forests between 1.000 and 1.700 m a.s.l. in the N mountain regions of Kolašin (Opasanica, Vučji Potok, Veruša etc.), Bijelo Polje (Lisa, Pavin Potok etc.), Pljevlja (Kovač Mountain, surroundings of the Ćehotina Valley etc.), as well as the surroundings of Berane, Rožaje and Nikšić. Since White-backed Woodpeckers are found throughout the country (with some birds breeding lesser than 4 km of air-distance from the seashore in the Orjen Mountains) this will be no easy task. But given that according to present population estimates, Montenegro holds an important portion of the Balkan subspecies *lilfordi*, a thorough study of the species distribution and habitat requirements will be of greater importance for conservation.

PSPA	POPULATION ESTIMATE		DENSITY (PAIRS/ KM²)
	MIN	MAX	
Morača canyon	**247**	**494**	**10,74**
Kuči and Cijevna canyon	**151**	**301**	**12,75**
Bjelasica Mountain	**145**	**290**	**6,70**
Visitor and Zeletin	**140**	**281**	**13,10**
Moračke Mountains	**122**	**245**	**12,73**
Durmitor	97	194	3,48
Komovi Mountains	88	176	4,40
Orjen Mountain	87	173	7,20
Piva	51	103	2,53
Prokletije Mountains	30	59	2,01
Šekular, Mokra, Cmiljevica	17	35	0,44
Lovćen and Paštrovići	11	22	0,80
Kričak	11	22	0,35
Rumija Mountain	6	12	0,44
Ljubišnja	3	7	0,41
Total pSPA	**1.207**	**2.414**	
Total Montenegro	**2.400**	**4.800**	

Following to current knowledge we estimate the the national population of Montenegro at 2,400 - 4,800 bp, with about half of the population outside of the currently identified pSPAs. In the table the five best areas which trigger C6 criterion, for the umbrella species of old-growth beech forests are marked in bold:

@B.Rubinić

Syrian Woodpecker
Dendrocopos syriacus

CRITERIA TRIGGERED: *C6 (5 bp)*
STATUS: B
POP. MNE: 650 – 1.000 bp
% OF POP. IN PSPA: ca. 50%
N OF PSPA WITH OCCURRENCE: 13

Syrian Woodpecker is one of the species that has colonized Montenegro in recent history. This species was not recorded by Reiser & Führer (1896) in the 19th century and by the majority of the researchers of the 20th century (i.e. Kattinger 1958/59, Boswall & Dawson 1975, Vasić 1979). It seems that the species colonized Montenegro in 1970s or a little earlier. In the early 1970s the species was found around Skadar Lake: In 1973 it was noted at Zeta railway station and in 1974 in Manastirska Tapija (O. Vizi, unpubl.). At the same time the species has been still not recorded at the coast and was not reported from any other site in the country (Matvejev 1979). A record from Šasko Lake on 10 July 1977 may be one of the first observations at the Montenegrin coast (O. Vizi, unpubl.). An older and rather odd record was reported from Piva valley in the NW of the country, in an area that is not very typical for Syrian Woodpecker in Montenegro. The species was further reported to be relatively common in orchards and gardens in the vicinity of Plužine, especially near Šćepan Polje by Vučković & Vizi (1977). Later, at the end of the 20th/beginning of the 21st century the species was already noted in many sites around Podgorica and in S Montenegro. Vizi (1992) reported it in Morača Valley and mentioned the species in 1990 as a common resident in the wider sections of the Tara river valley in Veruša, Kolašin, Gornja and Donja Polja in Mojkovac, Tepca and Dobrilovina (Vizi 1990). Two or three individuals were observed regularly in Buljarica between 10 and 17 September 2001 (I. Hulo, unpubl.). And in 2003 the population of Syrian Woodpecker in the Bojana river delta was estimated at more than 42 bp (Schneider-Jacoby et al. 2006) where the species, besides orchards and gardens, is relatively common in alluvial forests and woodlands in Stoj and along the Bojana river (Euronatur/CZIP database).

Significant attention was given to the species which is little known in Montenegro, during field research in 2017 and 2018. Altogether 81 records were collected, 54 of it by focused field surveys

in Podgorica, along the coast and in Bjelopavlići Valley where, in all, 235 survey points where checked for the presence of the species with the playback method. Other data were derived from published and unpublished sources and from online platforms (Observation.com, E-Bird and BirdTrack).

Only 5 (6%) out of all 81 records, all of the former from Piva valley, were from areas outside the Mediterranean part of the country. We obtained any confirmed data from Tara, Lim or Ćehotina valleys or any other site, except of Piva, in the N part of the country. The vast majority of Syrian Woodpecker were found in orchards, olive-groves and gardens in the lowlands of S Montenegro around 100 m a.s.l. or lower. In some place, like Velika Plaža the speciesis present < 1 km from coastline e and at -1 m a.s.l. in the cryptodepression of Skadar Lake. The highest elevation where Syrian Woodpecker was recorded in Montenegro was at 951 m a.s.l. in an old thermophile oak forest N of Radovče in Moračke Planine.

Due to limited data a thorough assessment of the Syrian Woodpecker population was not possible within this project. But, based on current data and best expert knowledge we are confident that population estimates below allow at least a relative comparison of population size between the best sites of the species in the country. With the help of further surveys will provide more accurate estimates of absolute population numbers. However, the national population of Montenegro is provisionally estimated at 650-1.000 bp, with about 50% of the population living the proposed SPAs.

The five best areas, triggering C6 criterion for SPA indentification, for Syrian Woodpecker are:

- Bjelopavlići Valley with an estimated population of 100-150 bp
- Skadar Lake with 50-100 bp
- Bojana Delta with >42 bp
- Podgorica and Lower Morača with 30-50 bp
- Paštrovići and Gornja Zeta with 20-50 bp

@B.Rubinić

Lesser Grey Shrike
Lanius minor

CRITERIA TRIGGERED: *C6 (15 bp)*
STATUS: B
POP. MNE: 180 – 360 bp
% OF POP. IN PSPA: ca. 50%
N OF PSPA WITH OCCURRENCE: min. 13

For the 19th century Reiser & Führer mention the Lesser Grey Shrike as the most common shrike which breeds everywhere in Montenegro except in the higher hills and mountains. They saw the species, particularly, in lowlands with higher trees over the whole of Zeta area, in Ćemovsko Polje, Lješkopolje, along the Sitnica River (Komani), in Bjelopavlići Valley, and more rarely in lowlands of the Morača River, around Cetinje and Nikšić. Nests that were mostly built from aromatic herbs, were usually found in wild pears Pyrus amygdaliformis, but also in poplars (Populus sp.), especially in the Morača valley and around Spuž (Reiser & Führer 1896).

Records from 20th Century are not that numerous and concern mainly observations of individual or small groups of birds. Lesser Grey Shrikes were observed in Tuzi, Ulcinj and in Kotor in May 1974 (Boswall & Dawson 1974) and were concerned to be breed regularly in open stony areas at the base of the Durmitor Mountain Massif, in particular in Komarnica village (Vasić et al. 1990). But the species was not mentioned in an inventory of the birds of Piva (Vučković & Vizi 1977) and the Morača River (Vizi 1992). A few sightings from Skadar Lake prove that the species may have been a regular breeder in small numbers in several localities around the lake during the 1970s and 1980s; i.e. Božaj, Kornjača, the base of Hum hill and in Vranjina (O. Vizi, unpubl.).

Sightings remained uncommon during the early 21st century. However, Lesser Grey Shrike appears to be a regular breeding bird in Ćemovsko Polje, but of only with up to 2 bp between 2000 and 2017 (B. Rubinić, pers. obs.), as well as in Štoj, near Ulcinj, with up to 2 bp (Schneider-Jacoby et al. 2006; B. Rubinić, T, Petras, P. Sackl, pers. obs.), 1 bp each in Dodoši on Skadar Lake on 28 June 2007 and in Čevo on 8 May 2008 (B. Rubinić, pers. obs.). Additionally, one bird was seen near Krstac village on 6 May 2003 (Vrezec 2003), a family of 2 adults with 2 fully fledged youngs

in Dragaljsko Polje on 17 July 2012 (Vujović 2012), one individual on 5 August 2002 near Virak on Durmitor (D. Radišić, unpubl.) as well as two families on 14 September 2017 on Vučje above Nikšić (M. Šoškić, unpubl.). During research of Orjen Mountain in 2016 a small colony was discovered in Grahovsko Polje with at least 5 bp nesting in large poplar trees (Populus sp.) at the W edge of Grahovo village and 1 bp near Vilusi village (Rubinić 2016).

The population of Lesser Grey Shrike has heavily declined in C Europe and over much of the western part of its range since the 1950s and 1960s (Tucker & Heath 1994, EBCC 2019, Štumberger 2001). Obviously, Montenegro was no exception from that common trend. Therefore, we decided to pay special attention to the species during field surveys in 2017 - 2018. Transect counts targeted of Lesser Grey Shrike were performed in Nikšićko Polje, along the Lim River, on the N shores of Skadar Lake and in Bjelopavlići Valley. However, opportunistically the species was noted during bird surveys in cultural and other open landscapes that were targeted at Barred Warbler, Ortolan Bunting and Wood Lark.

In all, we compiled records for 58 territorial pairs in 2017 and 2018.Together with more then 30 records from published and unpublished sources, these data allowed a general assessment of species' overall population size in the country. The total breeding population of Lesser Grey Shrike within the boundaries of the identified pSPAs was estimated at 88 - 137 bp which we suppose amounts to about 50% of the national population that is covered by pSPAs. That further implies that about 180 - 360 bp of Lesser Grey Shrike breed in Montenegro which is considerably more than the 20 - 50 pairs previously estimated by Puzović et al. (2002). But the later estimate was, of course, based on a much smaller and largely qualitative database. The highest point where the breeding of Lesser Grey Shrike has been confirmed is in 1.140 m a.s.l. in Dupljaci village in Pešter pSPA. Almost certainly a few pairs breed on the plateau at the base of the Durmitor Mountains (around 1.400 m a.s.l.; D. Radišić, B. Rubinić unpubl.), but breeding could not be confirmed. But birds were seen in higher areas in the post-breeding period. However, the majority of the population breeds between 0 and 600 m a.s.l., mainly in valleys, poljes and lake basins and more rarely on open plateaus on lower hills and in the mountains with scattered trees. Most commonst Lesser Grey Shrikes are observed in more open parts of traditional mosaic landscape, especially in areas with higher solitary trees (especially poplars Populus sp.) and in tall orchards.

The five most important sites for the species, triggering C6 criterion for SPA selection, are:

- Nikšičko polje harbouring an obviously healthy population of 30 - 50 bp
- Skadar Lake with 20 - 25 bp mainly on its N shores
- Bratogošt with 10 - 20 bp
- Lim valley and Plavsko Lake with 10 - 15 bp
- Pešter with 10 - 15 bp

@B.Rubinić

Calandra Lark
Melanocorypha calandra

CRITERIA TRIGGERED: *C6 (5 bp)*
STATUS: B
POP. MNE: 70 – 80 bp
% OF POP. IN PSPA: 90%
N OF PSPA WITH OCCURRENCE: 1

At the end of the 19th century Reiser & Führer (1896) stated that Calandra Lark breeds in only three places around Podgorica: Čemovsko Polje, Lješko Polje and Zagorica. As a true steppe bird the species breeds on barren heaths, rich in scree and thorny bushes and overgrown with lush taller grasses. Reiser & Führer (1896) estimated the number of breeding pairs in Montenegro at not more than around 100 bp. While population size has not changed dramatically over the last 100 – 150 years, due to the growth of Podgorica town and the establishment of "Plantaže" vineyards since 1982 (Plantaže 2018) the species' breeding area now covers propably only two thirds of the once pretty vast breeding habitats in Ćemovsko Polje. While about 800 ha of Ćemovsko Polje and Lješko Polje remain in relatively natural condition, the third breeding place where Calandra Lark was found in 19th Century, in Zagorica (now Zagorić), was almost entirely built-up and no longer suitable as a breeding habitat for the species. Hence, all recent records are limited to Ćemovsko Polje and Lješkopolje (e.g., Ivanović 1970, Vizi 1992). The species breeding area in Montenegro is nowadays restricted to the remaining fragments of steppic habitat in Podgorica basin that cover around 850 ha. But not all habitat fragments are inhabited by Calandra Lark. The species prefers areas with a combination of bare ground with sparse vegetation and individual bushes and lusher meadows with thicker vegetation, usually overgrown with dense stands of White Asphodel Asphodelus albus (B. Rubinić, unpubl.). On the other hand the species avoids human presence. Therefore, the species avoids many smaller habitat fragments (A. Thelin in prepl.). During June 2016 the breeding population of Calandra Larks in 18 fragments of steppic habitat in Ćemovsko polje and in Lješkopolje was thoroughly surveyed and the population was estimated at 72 bp (A. Thelin, in prep.). Due to restricted access the two sites, i.e. Podgorica Airport and a plot of remaining steppic area within the Plantaže vineyards, weren't surveyed, but these areas are expected to hold no more than 10 additional pairs.

Even the remaining fragments of the once vast steppe habitat in Podgorica basin are currently threatened by constantly increasing human influences. Besides illegal waste dumping and of building materials, off-road driving, burning, and uncontrolled grazing, extensive areas are reclaimed for agriculture or build-up by industrial and urban developments (A. Thelin, in prep.).

The only area in Montenegro where Calandra Lark still thrives is therefore:

- Ćemovsko Polje harbouring 70-80 bp, triggering C6 criterion for SPA designation

@B.Rubinić

Greater Short-toed Lark
Calandrella brachydactyla

CRITERIA TRIGGERED: *C6 (15 bp)*
STATUS: B
POP. MNE: 170 – 200 bp
% OF POP. IN PSPA: 80%
N OF PSPA WITH OCCURRENCE: >5

Similar to Calandra Lark the distribution of Greater Short-ted Lark in Montenegro is very restricted. According to Reiser & Führer (1896), in the 19th century the species bred in "uncountable" numbers in the same areas as Calandra Lark around Podgorica. In contrast to the later species, its breeding areas include the dry and steeper slopes around the Podgorica basin up to the altitude of 500 m a.s.l. (Reiser & Führer 1896). Later, in the 20th century away from the known breeding areas in Ćemovsko Polje (e.g., Vizi 1992), nesting was recorded also at the mouth of the Bojana river (Vasić 1979). Also, since the beginning of 21st century, the observations remain more or less restricted to Ćemovsko Polje, Lješkopolje and the Stari Aerodrom area around Podgorica (e.g., D. Saveljić, M. Jovićević, B. Blažič unpubl.). But, in addition, a pair was observed on the beach in Buljarica on April 17 2009 (M. Šćiban, D. Radišić, A. Žuljević, unpubl.) and again in the same place on 30 April 2017 (B. Blažič, unpubl.). Most likely these observations concern birds stopping-over during migration, since the species was never observed in the area during numerous visits within the breeding season (B. Rubinić, unpubl.). During field research in 2017 and 2018 Greater Short-toed Lark was found In Nikšićko Polje (1 bp) and in Skadar Lake National Park (1 bp near Žabljak Crnojevića).

The species is futher present in the Bojana Delta. On 28 April 2003 a singing male was noted in paturelands in Gornij Stoj near Ulcinj (Euronatur/CZIP database). Greater Short-toed Lark further breeds, at least irregularly, in the Ulcinj Salina. Since 2003 small flocks were seen almost annually in the salina in April and May. But, till 2016, no through breeding surveys were conducted in the area. However, during systematic breeding bird surveys a solitary bird was noted on 1 May 2017 and in early-May as well as in late-June 2018 at least 7 singing males were present in dried-out crystallisation and evaporation basins (Sackl et al., in press).

Like for Calandra Lark, the most comprehensive survey was carried out by A. Thelin in June 2016 when 18 smaller and larger areas around Podgorica (on Ćemovsko Polje and Lješkopolje) were surveyed. 224 individuals of Greater Short-toed Larks were registered, and the breeding population was estimated at 127 bp. Two areas where an additional 30-40 bp may breed were not surveyed due to the access issues (A. Thelin, in prep.). Greater Short-toed Lark is less sensitive to human presence than Calandra Lark, but as it is more or less restricted to the same steppe habitats which in Montenegro currently cover only around 6% of its original extent, the species is generally threatened by the same threats as other steppe birds in this Ćemovsko Polje. Greater Short-toed Lark may breed in small local populations in other arid areas, i.e. in dry river beds or lake banks, dry fields, extensive gravel islands, quarries or bare hilly plateaus accross the Mediterranean part of the country, but almost certainly these populations don't reach 15 pairs, necessary to trigger C6 criteria for SPA designation.

The only site in Montenegro where species reaches C6 criterion is:

- Ćemovsko Polje with 150-170 bp

@B.Rubinić

Wood Lark
Lullula arborea

CRITERIA TRIGGERED: *C6 (15 bp)*
STATUS: B
POP. MNE: 5.000 – 10.000 bp
% OF POP. IN PSPA: ca. 50%
N OF PSPA WITH OCCURRENCE: 34

The Wood Lark is a widely distributed and locally abundant breeding bird species of open, sparsely vegetated hillsides and plateaus of Montenegro. Reiser & Führer (1896) note that Wood Lark inhabits approximately the same areas as Skylark (Alauda arvensis) and describe its typical habitats as the edges between woodlands and high mountain plateaus. The species was later mentioned by many researchers as a common breeding bird of different traditionally used woodland landscapes interspersed by grasslands grazed by domestic animals and agricultural lands which inhabits many parts of the country, like the Piva region (Vučković & Vizi 1977), Morača canyon (Vizi 1992), Durmitor massif (Vasić et al. 1990), and Orjen Mountain (Rubinić 2016). As a migrant and winter visitor the species is known from pasturelands and coastal habitats in the Ulcinj area (Vasić 1979, Euronatur/CZIP database). Matvejev (1976) describes in some detail the breeding habitats of the species on the Balkan Peninsular, which in general include semi-open steppe, other dry lowland areas with mosaics of pastures and agricultural lands, well drained mountainous and hilly open and semi-open areas with sparse relict pine stands, agricultural and silvicutural used broadleaved and mixed woodlands intersected with pastures. Surch habitats are plentyful in most parts of Montenegro.

In 2017 and 2018 we investigated different forest communities in different successional stages for a number of species that are characteristic for traditionally used farmland and open grassland habitats. During these surveys data on the presence of Wood Lark were noted opportunistically. In all, we compiled a data set of 164 observations which concern mainly singing males from all around the country. Of these 45 observations for assessing the species' general distribution and abundances were derived from bird observation portals and some unpublished sources. Breeding records range from 50 m a.s.l. in Krute, near Ulcinj, up to the highest observation in 1.869 m a.s.l. on Mokra Mountain in Šekular, Mokra, Cmiljevica pSPA in NE Montenegro. The vast majority of records concern breeding evidence from drained alpine pastures, open woodlands, rocky bushlands and farmland mosaics between 900 and 1.300 m a.s.l.

Acording to current data Wood Lark breeds in particularly high abundances on sub-mediterranean mountain plateaus, namely in Bratogošt pSPA, in the Kuči and Pešter Mountains. A significant portion of the population inhabits subalpine and alpine grasslands on the plateaus and slopes beneath the highest mountain peaks of Montenegro, on Sinjajevina and in the Durmitor Massif. We estimate that around 50% of the Montenegrin population of 5.000 – 10.000 bp live within the borders of the proposed SPAs, where population densities were noted to fluctuate between 0.1 and 1.9 bp/km².

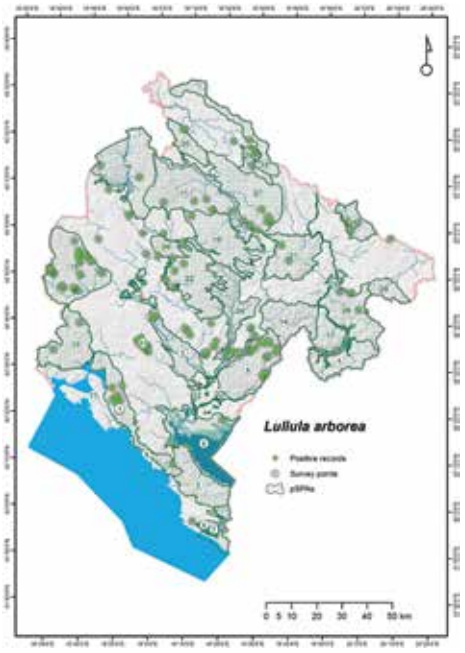


Figure 15: Survey points and positive records of the surveyed Wood Larks *Lullula arborea* in 2017 and 2018.

Matvejev (1976) mentiones that Wood Larks in the southern parts of the Balkans are mainly residents, while that from northern parts or birds that breed in higher altitudes are migratory. In particular, during cold spells with heavy snow large flocks concentrate in coastal lowlands while retreating from advancing snow in warmer climates (Matvejev 1976). Although large flocks (over 40 birds) of migranting Wood Larks are not common, occasionally heavy migration was observed in the Ulcinj area (SPA Bojana Delta) in November. In particular, in the pastures and farmlands on the Albanian side of the delta up to 15.000 -20.000 birds were counted in winter (Schneider-Jacoby et al. 2006). The numbers of Wood Larks which pass the Bojana Delta in autumn and winter may, therefore, be estimated at thousands. Flocks migrating in SE direction of 15 - 69 birds/h were observed on 3 November 2003 and hundreds of birds are seen regularly in the Štoj area in the Bojana Delta pSPA in winter (Schneider-Jacoby et al. 2006, D. Saveljić unpubl.). Hence, the coastal lowlands of the lower Bojana Delta may constitute the most important wintering site for the species in the country. But population numbers in other potentially significant wintering areas in Montenegro, like Ćemovsko Polje, Bjelopavlići Valley, Nikšićko Polje and others, have not been studied.

In the following table the five most important areas that trigger C6 criterion for SPA designation according to current knowledge are marked in bold:

PSPA	POPULATION ESTIMATE		DENSITY (PAIRS/ KM²)
	MIN	MAX	
Bratogošt	**638**	**1.277**	**1,3**
Kuči and Cijevna canyon	**298**	**596**	**1,7**
Durmitor	**217**	**434**	**0,1**
Pešter	**207**	**415**	**0,8**
Sinjajevina	**178**	**357**	**1,3**
Kričak	163	327	0,2
Moračke Mountains	146	292	1,9
Šekular, Mokra, Cmiljevica	141	282	0,5
Orjen Mountain	130	260	0,7
Bjelasica Mountain	115	230	0,1
Mataruge	82	163	0,4
Total pSPA	**2.510**	**5.020**	**0,8**
Total Montenegro	**5.000**	**10.000**	

@P.Sackl

Moustached Warbler
Acrocephalus melanopogon

CRITERIA TRIGGERED: *C6 (45i)*
STATUS: M
POP. MNE: 1.000 – 2.000i
% OF POP. IN PSPA: 100%
N OF PSPA WITH OCCURRENCE: 2

The Moustached Warbler is a short distance migrant. The European population spends the winter in the Mediterranean Basin and on the Balkan Peninsular (BirdLife International 2019). The species is one of the least known passerines in Montenegro and in the wider Balkan region. Records for Montenegro prior to 2018 are extremely rare. Moustached Warbler was not recorded by early researches and the only available data are a few observations in the Ulcinj Salina in autumn 2006 (Sackl & Petras 2017). An additional record was recently published on e-bird, a on-line platform for bird observations: On 8 April 2015, T. Pettersson observed a bird in Manastirski Lug at the mouth of Morača river into Skadar Lake.

In 2018 in the framework of a Natura 2000 project, in 2018, volunteers from Kiskunsági Madárvédelmi Egyesület/Kiskunság Society of Protection of Birds (KME) had been engaged for investigating two sites which were considered as potential stop-over sites of Moustached Warbler in Montenegro: Buljarica and Šasko Lake. Members of KME are working on the migration biology of Moustached Warbler since 2002. During the 17 year study they discovered several hitherto unknown resting and wintering sites of the species in the Mediterranean, especially in the Balkans. Valuable data on the species' migration routes and flyway were gained through ringing Moustached Warblers in winter quarters in Italy, Croatia, Albania, Greece, and Bulgaria. While basically wetlands along the whole length of Adriatic Sea's coast has been surveyed, only Montenegro remained a blindspot until 2018.

Between 13 and 20 October 2018 the team caught and ringed 106 Moustached Warblers in Buljarica. In addition, 10i which were previously captured in Hungary and Austria were recaptured. The high proportion of Moustached Warblers captured in Buljarica shows the importance of the site for the species as an autumn resting site within its Carpathian Basin-Balkan flyway. The total number of migrants which use the the reed beds of Buljarica for stopping-over and resting is provisionally estimated at 400 – 800i. In Šasko Lake (Bojana Delta pSPA), between 22 and 26 Oc-

tober 2018, 27 Moustached Warblers were captured and ringed. No formerly ringed birds were recaptured. Because the second group of the expedition visited Šasko Lake without preliminary field assesment, data was too weak for a serious estimate of the resting population of Moustached Warblers on Šasko Lake. Following studies are required to be done. According to research from previous years in the Albanian side of the Bojana Delta, the area is great importance for the species (P. Villányi, unpubl.).

It is very likely that there are other locations in Montenegro that function as important stop-over sites for the species. In particular, the reedbeds along Skadar Lake and the remaining reedbeds in the Bojana Delta should be surveyed in the following years.

Hence, two sites are known in Montenegro, where Moustached Warbler was recently found to stop-over in significant numbers during migration. Both sites reach the threshold of C6 criterion for SPA identification:

- Buljarica which is used by an estimated population of 400 – 800i for resting during autumn migration
- Bojana Delta with an estimate of several hundreds of individuals stopping-over during autumn migration

@B.Rubinić

Barred Warbler
Sylvia nisoria

CRITERIA TRIGGERED: *C6 (15 bp)*
STATUS: B
POP. MNE: 6.250 – 12.500 bp
% OF POP. IN PSPA: ca. 30%
N OF PSPA WITH OCCURRENCE: 13

Like Moustached Warbler, Barred Warbler is among the least known passerines of Montenegro. At the end of the 19th century Reiser & Führer (1896) noted the species only in woodlands in Presjeka, near Nikšić, and in Vasojevići. Also from the 20th century it was reported by a handful of observations: According to Kattinger (1958/59) L. v. Führer saw the species on Medun in the Kuči Mountains on 22 June 1934 and Boswall & Dawson (1974) reported an observation of Barred Warbler from Šasko lake on 16 May 1974. In contrast, the species was not found during bird surveys in the Piva area (Vučković & Vizi 1977) and of the Morača River (Vizi 1992). However, Vasić et al. (1990) found one individual on the slopes of Durmitor Mountain, in Pošćenje village, near Šavnik, on 6 July 1971. Based on this record he considered the species as possible breeding bird of the area. Records from the 21st century are not more numerous. Although Barred Warbler may be widely distributed in Montenegro, the majority of potential breeding areas were not visited by ornithologists. On the other, despite the very characteristic song, due to its relatively secretive behaviour the species is often overlooked. Hence, since 2000, only 3 bp have been recorded on the E slopes of Orjen Mountain in 2016 (Rubinić 2016). Additionally, 13 records were collected in different parts of N Montenegro during surveys for the European Breeding Bird Atlas by CZIP in 2016, i.e. in Nikšićko Polje, on Prekornica Mountain, in Komarnica, in Bukovica valleys, and near Petnjica (CZIP database).

To clarify the status of Barred Warbler and for assessing the species' general distribution and abundance in Montenegro, we spent a lot of our capacities to investigate potential breeding habitats, that are, in particular, mesophile semi-open shrublands in landscapes dominated by mosaics of traditionally used farm- and woodlands in middle elevations across the country. During the breeding season, in 2017 and 2018, the presence and abundances of Barred Warbler was investigated along approximately 80 km of a combination of preselected and opportunistically selected transects. In all, a total of 251 breeding territories (mainly singing males) were registered during this field work which allow a completely new understanding of the species' distribution and population size in the country, in which the breeding population was previously estimated at 0 - 50 bp (Puzović et al. 2002).

Barred Warbler was mainly found in the N, W and central parts of Montenegro. According to the current assessment the species is locally very abundant, even the dominating passerine in many areas of traditional mosaic landscapes between 600 and 1.500 m a.s.l. The lowest elevation where the species was recorded in Montenegro is 600 m a.s.l. in Nikšićko Polje, with the highest record in 1.448 m a.s.l. in Barice village on Sinjajevina Mountain. The highest population densities between 5.6 and 9.0 bp/km² were found in bushes and treelines that intersect mesophilic meadows and small fields in Nikšićko Polje and on the slopes of Bukovica Valley. A little lower densities of 1.0 to 2.8 bp/km² were recorded in the valleys and in the more humid parts on the slopes of Moračke Planine, Sinjajevina, Bjelasica Mountains, Pešter, in Lim Valley and in extensive areas of Bratogošt pSPA. As in other parts of its range, in Montenegro Barred Warbler prefers hedgerows in traditional mosaic landscape dominated by hay meadows, crop fields, fallow fields, pastures and, sometimes, interspersed by orchards and vineyards. This type of habitat is still characteristic and a well preserved element of Montenegrin rural areas. In contrast in the mediterranean and sub-mediterranen part of the country Barred Warbler is rare and confined to lush and humid areas, usually small valleys or undrained mountain slopes with N exposition.

Figure 16: Survey points and positive records of the surveyed Barred Warbler *Sylvia nisoria* in 2017 and 2018.

In the continental and mountainous climates of Montenegro Barred Warbler is a characteristic, abundant and locally even dominant breeding bird species. The presence and breeding densities of the species are, apparently, good indicators for the extent and condition of traditionally used cultural landscapes [?]. Habitats and population densities are comparable to the best areas for the species in Europe (i.e., Cramp & Brooks 1992, Polak 2012, Neuschulz 1981, Rubinić et al. 2010, Denac et al. 2011, 2012/13). According to current data national population of Barred Warbler in Montenegro is estimated at 6.250 – 12.500 bp. Of these around a third of the population is captured by the proposed SPA network. Nevertheless many other areas across the country would be needed to investigate to complete the current knowledge on the distribution and local numbers of the species in Montenegro.

PSPA	POPULATION ESTIMATE		DENSITY (PAIRS/ KM²)
	MIN	MAX	
Bratogošt	**861**	**1.722**	**2,7**
Nikšičko polje	**274**	**548**	**5,9**
Lim Valley and Plav Lake	**253**	**505**	**3,7**
Pešter	**218**	**435**	**2,8**
Bukovica Valley and Vojnik Mountain	**205**	**411**	**9,0**
Mataruge	114	227	2,2
Bjelasica Mountain	56	111	1,3
Moračke Mountains	38	76	1,0
Piva	23	46	0,2
Sinjajevina	18	36	2,2
Total pSPA	**2.510**	**5.020**	**0,8**
Total Montenegro	**5.000**	**10.000**	

In the following overview the five most important areas for Barred Warbler, triggering C6 criterion for SPA selection, are marked in bold:

@M.Jovićević

Tawny Pipit
Anthus campestris

CRITERIA TRIGGERED: *C6 (15 bp)*
STATUS: B
POP. MNE: 730 – 1.460 bp
% OF POP. IN PSPA: ca. 80%
N OF PSPA WITH OCCURRENCE: 20

According to researchers from the end of the c19th century Tawny Pipit is distributed over most parts of Montenegro, reported as a common breeding bird around Podgorica, in Spuž and Danilovgrad in Bjelopavlići Valley, near Plavnica on the banks of Skadar Lake and on the slopes of Lovćen Mountain, near Njeguši and Cetinje. Reiser & Führer (1896) registered the species more regularly in rocky, tree-less areas which were bordered by fallow fields and meadows. In the 20th century, following to the low number of observations, the species was properly overlooked by many observers. Thus, for example, the species was not recorded in Durmitor massif (Vasić et al. 1990), in the Piva region (Vizi 1977), along Morača river or in Ćemovsko polje (Vizi 1992), where only the observation of a single individual was was published by Boswall & Dawson (1974). In the Ulcinj area Tawny Pipit is mentioned as uncommon only by H. Kuemerloeve, but not by subsequent researchers (Vasić 1979).

Later, at the beginning of the 21st century a few further records were collected throughout the country, i.e. 3i observed on Krnovo on 20 July 2011 (Vizi 2011), 3 bp in lower Morača canyon (Saveljić 2008) and a bpin the Ulcinj Salina in 2003 (P. Sackl, unpubl.). At the same time, in 2003, the breeding population in the Bojana Delta was estimated at over 10 bp but these numbers refer also to the Albanian part of the delta (Schneider-Jacoby et al. 2006). In 2016, at least 2 bps were found in Dragaljsko Polje on the slopes of Orjen Mountain (Rubinić 2016), while the population on Možura hill near Ulcinj was estimated at 6 bp in 2011 (Rubinić et al. 2011). So far, the most comprehensive population survey of Tawny Pipit in Montenegro was carried out in Ćemovsko Polje by A. Thelin in 2016, who investigated 18 smaller and larger plots of remaining steppe habitat around Podgorica for breeding larks and pipits. Based on this data the population of Tawny Pipit was estimated at 30 bp, but two relative extensive areas - Podgorica Airport and parts of relict steppe habitats within the “Plantaže” vineyard plantation - were not surveyed (A.

Thelin, in prep.). Therefore, the total population in Ćemovsko polje may be some 5 - 10 additional pairs larger.

During fieldwork in 2017 and 2018 some previously unknown strongholds of the species in Montenegro were found. A dataset of a total of 91 records of Tawny Pipit, including 34 records from published and unpublished sources, was compiled. However, the majority of observations were collected during surveys targeted at other species which are characteristic for barren and dry landscapes (i.e., Rock Partridge, Ortolan Bunting). In all, 16 breeding territories were recorded on Sinjajevina Mountain. Following to the extent of adequate breeding habitat the total population of the area was estimated at 183 - 365 bp. The population on nearby Moračke Planine for which we have 10 observations in our dataset, according to the extent of similar habitats like on Sinjajevina Mountain of extensive sub-alpine grasslands with numerous dry hilltops, covered by rocks and sparse vegetation, the population of Tawny Pipit is estimated at 104 - 209 bp. Smaller but very similar habitats exist on Kričak, in the Durmitor and Kuči Mountains where significant local populations of Tawny Pipits were found. In the mediterranean and submediterranean part of the country, Tawny Pipit was found on bare surfaces in remains of natural steppe habitats, in garigue, on river banks, in dry and abandoned fields, quarries, in rocky outcrops of barren hills and in similar habitats. High breeding densities were found in sparsely vegetated garigue and hill-slopes in Bratogošt, on the southern bare slopes of Lovćen and Paštrovići mountain ridges and in drained parts of Bjelopavlići Valley and Nikšićko Polje.

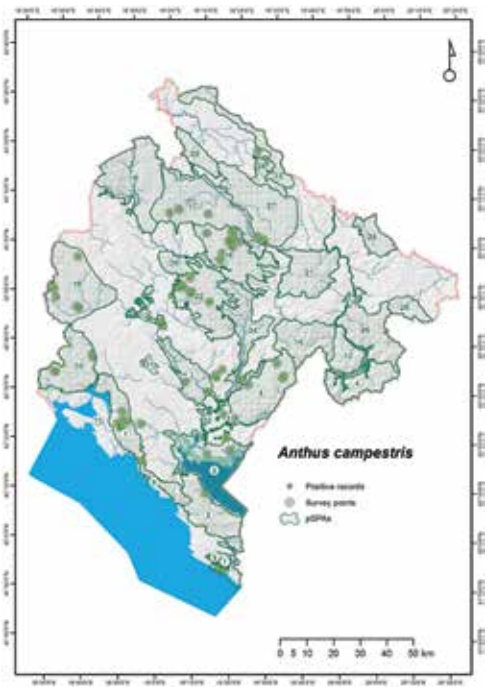


Figure 17: Survey points and positive records of the surveyed Tawny Pipit *Anthus campestris* in 2017 and 2018.

Based on survey data, 2017 – 2018, and the assessment of published and unpublished data, the overall Montenegrin population of Tawny Pipit is estimated at 730 – 1.460 bp with some 80% of the total population breeding within the borders of the proposed SPA network. While in the cryptodepression around Skadar Lake Tawny Pipit breed 3 m below sea level, the highest record of the species was noted in 1,832 m a.s.l. below Žijovo peak in the Kuči Mountains.

In the following overview the five most important areas for the species which trigger C6 criterion for SPA identification are marked in bold:

PSPA	POPULATION	
	MIN	MAX
Sinjajevina	**183**	**365**
Moračke Mountains	**104**	**209**
Kričak	**46**	**93**
Bratogošt	**44**	**88**
Ćemovsko polje	**35**	**40**
Kući and Cijevna canyon	31	61
Lovćen and Paštrovići	30	61
Durmitor	27	53
Bjelopavlići Valley	22	44
Nikšićko polje	19	37
Total pSPA	**610**	**1.188**
Total Montenegro	**730**	**1.460**

@M.Jovićević

Ortolan Bunting
Emberiza hortulana

CRITERIA TRIGGERED: *C6 (15 bp)*
STATUS: B
POP. MNE: 150 – 400 bp
% OF POP. IN PSPA: ca. 90%
N OF PSPA WITH OCCURRENCE: >7

At the end of the 19th century Ortolan Bunting was a common breeding bird in oak forests that cover the dolinas of the Bratogošt area in W Montenegro, close to the border with Bosnia and Herzegovina, in particular near the villages of Ništice and Krstac. According to Reiser & Führer (1896) the species is lesser common anywhere else in the country. Besides in Bratogošt, Ortolan Bunting was noted at the edge of the Bukovica valley above the village of Bukovica, in the upper Morača valley, in Vasojevići and in the higher parts of Lješanska Nahija. Few individuals were further collected in vicinity of Njeguši, Cetinje and Rijeka Crnojevića. During migration a few birds were also shot in Duklja near Podgorica and in Ulcinj in April. But Reiser & Führer (1896) emphasize that the species has a rather narrow distribution in Montenegro. Only a handful of observations throughout the country are available for the 20th and early 21st centuries. A single bird was observed in Mratinje on 8 June 1975 (Vučković & Vizi 1977) and another in Mratinjski potok on 31 May 1979 (O. Vizi, unpublished data). Finally, in early May 2005 two territorial males were observed on Ostros Pass above Vladimir immediately at the Albanian-Montenegrin border (I. Geister, T. Petras & P. Sackl, unpubl.).

Ortolan Bunting is for sure one of the most characteristic breeding species of traditionally used landscapes and on the other side one of the most threatened ones. Although in the Mediterranean population decline is less evident, the species is threatened, both, by comparably small habitat changes in the breeding areas and by considerable losses during migration and in the wintering areas (Menz & Arlettaz 2012, Hagemeijer & Blair 1997). Ortolan Bunting depends on small-scale mixed farmland habitats that are increasingly converted into larger-scale intensively used agricultural lands all over the Mediterranean region (e.g., de Groot et al. 2010, Sirami et al. 2007, Denac et al. 2011).

A number of field surveys in many areas in Montenegro were targeted at Ortolan Bunting. Around 30 field days were devoted to investigate areas with potentially suitable habitats for the species. It was, however, not possible to examine all of the locations where the species was recorded in the past. Hence, a significant amount of work remains to be done to complete the knowledge of the species' distribution and numbers in Montenegro.

Anyway, it is by evidence the most important areas for the species are still exactly the same where L. v. Führer recorded the highest concentrations of Ortolan Buntings in the 1890s, more than 120 years ago. During our field surveys Ortolan Bunting was found in large numbers in dry meadows with loose stands of oaks (Quercus sp.) along the edges of the mosaic cultural landscapes in the wider Bratogošt area in the W of the country. In this area 67 territorial males (bp) were recorded in 2018, while large areas including those where the species has been recorded in the 19th century were not surveyed. Thus, the whole population is undoubtedly larger. We provisionally estimate the total population of Ortolan Bunting in the of wider Bratogošt area at 100 - 300 bp. In 2017 a new breeding location was discovered by M. Jovićević in the western parts of Garač Mountain in central Montenegro. We investigated the area in 2018 and found a population of 20 - 40 bpairs in sub-mediterranean cultural landscape with patches of bare ground and fallow fields. In more natural habitats the species breeds on the southern slopes of the Lovćen and Paštrovići ridges and on northern slopes of the Rumija Mountains, where Ortolan Buntings inhabit stony pastures with sparse grasses and solitary trees, on recently burned areas and at the edges of dry pastures and traditional Mediterranean mosaic landscapes. The Majority of Ortolan Buntings in Montenegro breed in altitudes between 700 and 1,200 m a.s.l., i.e. in the sub-mediterranean and sub-mountainous climate belts. The lowest altitude where the species was recorded was in 248 m a.s.l. above the village of Donji Murići on the N slopes of the Rumija Mountains. The highest points where the species was recorded were above Rikavačko Lake in the Kuči Mountains at an elevation of 1,560 m a.s.l. Ortolan Bunting was never recorded in areas with a typical Mediterranean climate, in areas which are inhabitated by Black-headed Bunting Emberiza melanocephala and it overlaps only rarely and in the highest regions with the range of Yellowhammer E. citrinella. More often the species' was found together with Rock Bunting E. cia and at least partially overlaps with the occurrence of Cirl E. cirlus and Corn Bunting Miliaria calandra.

The four most important sites for Ortolan Bunting in Montenegro that trigger C6 criterion for SPA selection are:

- Bratogošt harbouring an estimated 100 - 300 bp
- North-Western Garač Mountain with 20 - 40 bp
- Lovćen and Paštrovići with 20 - 30 bp
- Rumija with at least 10 - 15 territorial males

@M.Jovićević

SITES

BJELASICA MOUNTAIN

AREA	*31.816 ha*	
SPA CRITERIA	*C1, C6*	
SITE CENTRE LOCATION	*42°91'20.96'' N*	*19°66'58.69'' E*
LAND COVER, LAND USE, HABITATS	*broad-leaved forest*	*33%*
	mixed forest	*23%*
	natural grassland	*15%*
	agriculture, natural areas	*11%*
	transitional woodland/shrub	*8%*
	coniferous forest	*4%*
	complex cultivation patterns	*3%*
	sparsely vegetated areas	*2%*
PROTECTION STATUS (HA, %)	*Biogradska gora National Park* *5.650 ha (18%)*	
ADMINISTRATIVE REGIONS	*Kolašin, Mojkovac, Bijelo Polje, Berane, Andrijevica*	

GENERAL SITE CHARACTER

Bjelasica is a mountain range in North Central Montenegro, mostly covered with broadleaved and mixed forests. The highest areas, lying mostly above 2.000 m a.s.l., are areas of natural alpine grasslands and traditional pastures, while lowest areas are cultivated with non-intensive fields and pastures. The altitude of the SPA stretches from 800 m a.s.l. to over 2.100 m a.s.l. The highest point of Bjelasica is Crna Glava ("Black Head"), which is 2.139 m high.

The total area of the mountain range is 630 km^2, with an equal width and length of about 30 km, while the SPA covering about half of this area. Geological features of Bjelasica Mountain are of volcanic origins, with smooth round shapes and mildly rolling landscape, differing from most of Montenegro's other mountains of calcareous composition. As a result Bjelasica is abundant with streams and rivers that don't sink under the surface as in most of other Montenegrin areas with the prevailing limestone karstic geology. One of the most famous ones is Biograska River, a stream that fills a small Biogradsko Lake. This lake is a central part of the Biogradska Gora National Park, covering a surface of 5.650 ha, including 1.600 ha of the primeval beech forest, one of the largest remains of pristine forests in the Balkans and in Europe. The Bjelasica mountain range is bordered by Lim river from Eastern and Tara river from the Western side of the massif.

QUALITY AND ORNITHOLOGICAL IMPORTANCE

Due to the mainly favourable condition of large areas of forests, both broadleaved (beech) and mixed forests in higher areas, Bjelasica Mountain is important for several forest bird species. Most importantly for White-backed and Three-toed Woodpeckers, but also for Hazel Grouse and Capercaillie. High-altitude mixed and coniferous forests of Norway Spruce and Silver Fir are important also for Boreal and Pygmy Owls. In lower open and semi-open areas and areas of traditional mosaic agriculture, significant numbers of birds of cultural landscapes can be found, such as Barred Warbler, Red-backed Shrike *Lanius collurio*, Hoopoe *Upupa epops* and Wood Lark.

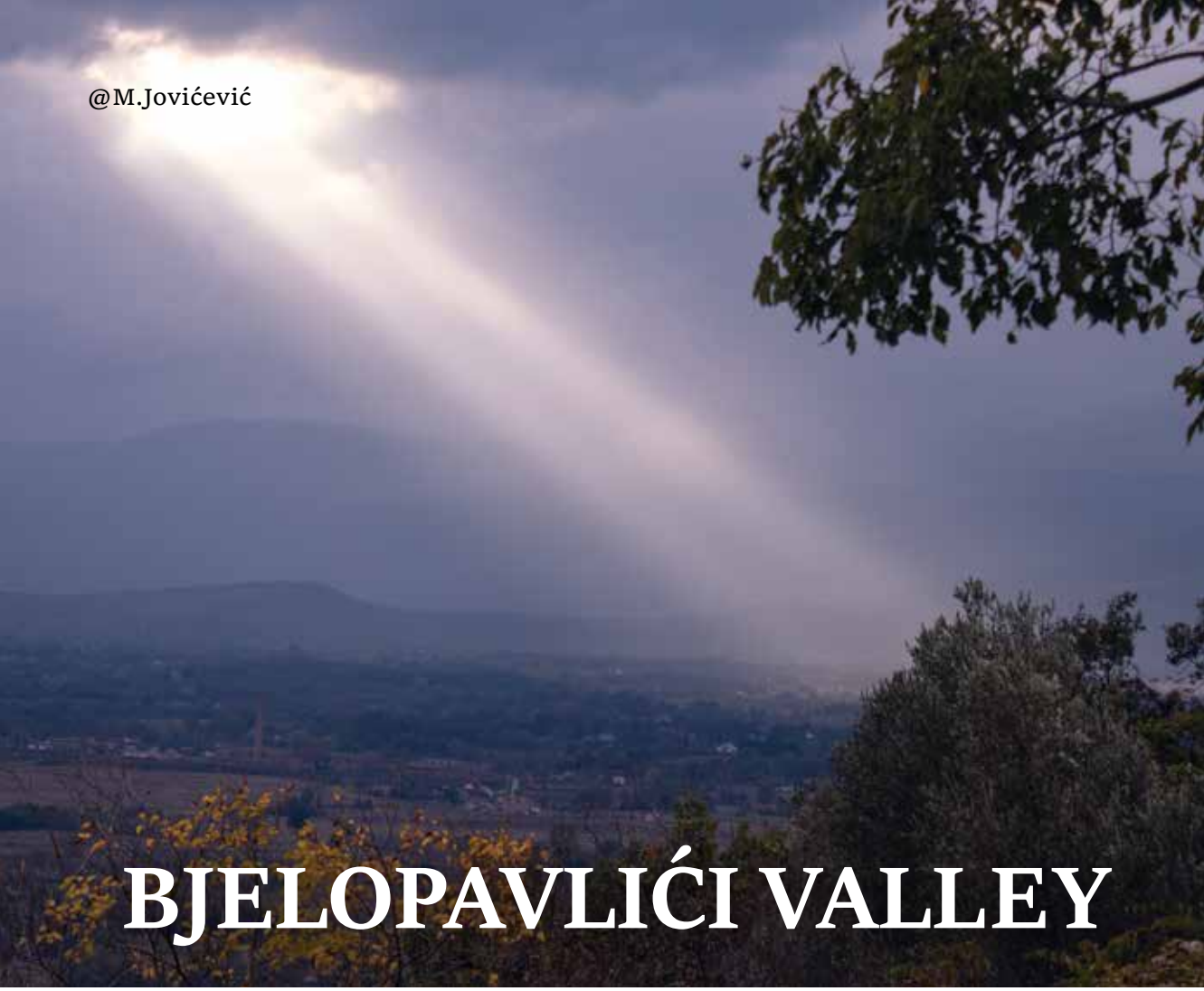
CRITERIA SPECIES	CRITERION	THRESHOLD	POPULATION ESTIMATE			
			MIN	MAX	UNIT	SEASON
Alectoris graeca	C1	40 p	100	200	p	R
Bonasa bonasia	C6	Top 5 sites (3.)	220	440	p	R
Dendrocopos leucotos	C6	Top 5 sites (3.)	145	290	p	R
Picoides tridactylus	C6	Top 5 sites (3.)	71	142	P	R

THREATS, PRESSURES AND ACTIVITIES WITH IMPACTS ON THE SITE

Main threats are logging of old-growth forests outside the Biogradska Gora National Park borders and increased human presence within the small National Park. Few areas of Bjelasica (i.e. herdsmen's huts) are and can be a subject of continuous unplanned urbanisation, while disturbance by 4x4 vehicles can pose threat to some species of birds and other animals. Abandonment of pastures and reforestation can have a negative effect for the birds of open cultural landscapes and for some raptors, i.e. Golden Eagle.

CONSERVATION MEASURE RECOMMENDATIONS

Sustainable logging, traditional land use and regulated management of tourists. The use of 4x4 vehicles outside of prescribed areas within the network of existing roads should be banned.



@M.Jovićević

BJELOPAVLIĆI VALLEY

AREA	*20.575 ha*	
SPA CRITERIA	*C1, C5, C6*	
SITE CENTRE LOCATION	*42°55'62.52'' N*	*19°12'39.80'' E*
LAND COVER, LAND USE, HABITATS	*agriculture, natural areas*	*29%*
	transitional woodland/shrub	*16%*
	broad-leaved forest	*16%*
	pastures	*12%*
	complex cultivation patterns	*10%*
	sparsely vegetated areas	*9%*
	discontinuous urban fabric	*4%*
	agro forestry areas	*2%*
	inland marshes	*1%*
PROTECTION STATUS (HA, %)	/	
ADMINISTRATIVE REGIONS	*Podgorica, Danilovgrad, Nikšić*	

GENERAL SITE CHARACTER

Bjelopavlići Valley is a fertile river-plain, stretching some 30 km in length and up to 6 km in width from Glava Zete in the NW (the Head of Zeta river) towards Podgorica city in the SW. The main river of the plain is Zeta river, after Bojana river the most water-rich river in the country. Zeta is the largest underground river in Montenegro, originating in the springs of Gornje polje near Nikšić and appearing after the highest underground fall (563 m) at Glava Zete. Along the natural flows of Zeta and smaller Sitnica river there is a narrow belt of alluvial forest, while the rest of the Bjelopavlići Valley featuressmall patches of fields and pastures, intersected with small scattered settlements, orchards, vineyards and hedges. Forests along the river and in small fragmented tree stands are broadleaved, with prevailing oaks *Quercus sp.* and ashes *Fraxinus sp.*

Red-rumped Swallow *Cecropis daurica*, @B.Rubinić

QUALITY AND ORNITHOLOGICAL IMPORTANCE

Due to the mixture of arable and fallow fields, forest fragments and water, in combination with the warm sub-Mediterranean climate, this area is among the most suitable and important sites in the country for Turtle Dove *Streptopelia turtur* and Levant Sparrowhawk *Accipiter brevipes*, which inhabit warm valleys with structured landscapes. Numerous orchards and gardens with peach, apricot, plum and other trees make it very attractive for Syrian Woodpecker *Dendrocopos syriacus*, while oak stands are motsly inhabited with numerous Middle-spotted Woodpeckers *Leiopicus medius*. The natural condition of Zeta and Sitnica rivers with plenty of eroded banks, are very suitable for the nesting of a large population of Common Kingfishers *Alcedo atthis*, while the tall trees along the upper flow of the Zeta river host a small colony of Night Herons *Nyctycorax nyctycorax*. The cliff edges of the valley are nesting sites of a healthy population of Eagle Owls *Bubo bubo* and two or three pairs of Golden Eagles *Aquila chrysaetos* that hunt both in the valley and on surrounding hills and mountain plateaus. Due to its SE-NE direction and natural connection to Skadar Lake and further on with Bojana river and Skadar Lake, Bjelopavlići Valley is also important during spring migration, when many birds coming off the Adriatic Flyway follow this natural corridor flowing from the Adriatic coast, Bojana river, Skadar Lake and Zeta river towards the NW of the country and further on to the karst poljes of Bosnia and Herzegovina and plains of Sava river in Croatia. As such Bjelopavlići has been identified as the first area in Montenegro reaching C5 criteria for migratory bottle-neck bird concentrations. Large numbers of Common Cranes *Grus grus*, Northern Lapwings *Vanellus vanellus* and European Honey-buzzards *Pernis apivorus* can be observed mostly flying over the valley during spring migration.

CRITERIA SPECIES	CRITERION	THRESHOLD	POPULATION ESTIMATE			
			MIN	MAX	UNIT	SEASON
Streptopelia turtur	C1	20 p	162	323	p	B
Grus grus	C5	3.000 i	4.065		i	M
Nyctycorax nyctycorax	C6	Top 5 sites (3.)	8	10	p	B
Vanellus vanellus	C1	60 i	200	1	i	M
Bubo bubo	C6	Top 5 sites (3.)	10	15	p	R
Accipiter brevipes	C6	Top 5 sites (2.)	15	20	p	B
Alcedo atthis	C6	Top 5 sites (2.)	30	40	p	B
Dendrocopos syriacus	C6	Top 5 sites (1.)	100	150	p	R
Picoides tridactylus	C6	Top 5 sites (1.)	243	485	p	B
Lullula arborea	C6	Top 5 sites (3.)	217	434	p	B

THREATS, PRESSURES AND ACTIVITIES WITH IMPACTS ON THE SITE

Due to the vicinity of Montenegrin capital city, Podgorica, main threats are continuous urbanization and infrastructure development along main roads and urban centres, illegal construction and use of pesticides in agriculture, communal and industrial pollution and waste disposal. Autumn poaching of quails is a widespread practice and cases of illegal killings and poisoning of raptors are regular.

CONSERVATION MEASURE RECOMMENDATIONS

Urban planning, solid and liquid waste management, more efficient hunting law enforcement and sustainable and more controlled use of pesticides.

BOJANA DELTA

AREA	*9.600 ha*	
SPA CRITERIA	*C1, C2, C3, C4, C6*	
SITE CENTRE LOCATION	*41°92'97.62'' N*	*19°32'20.24'' E*
LAND COVER, LAND USE, HABITATS	*complex cultivation patterns*	*34%*
	transitional woodland/shrub	*15%*
	agriculture, natural areas	*14%*
	broad-leaved forest	*11%*
	inland marshes	*8%*
	pastures	*5%*
	water bodies	*3%*
	discontinuous urban fabric	*3%*
	beaches, dunes, sands	*2%*
	water courses	*2%*
	sport and leisure facilities	*1%*
	sea and ocean	*1%*
PROTECTION STATUS (HA, %)	*Velika plaža Monument of Nature 600 ha (6,3%)*	
ADMINISTRATIVE REGIONS	*Ulcinj*	

GENERAL SITE CHARACTER

Bojana Delta is a small yet the largest river delta in Montenegro. This area of complex habitats comprises of river, its delta, smaller brackish and freshwater marshes, ponds and lakes, sandy beaches with dunes, riverine and coastal forests and different, mostly traditionally cultivated areas and is located in the SE-most corner of Montenegro. The site is shared with Albania (Bojana is called Buni river in Albanian) which has a little different, mostly more heavily degraded habitats. The most prominent habitats of the coastal part of the delta, situated along Velika plaža (Great beach) and Ada Island, are open mud banks, sandy beaches, sand dunes and beach brackish swamps. Along Bojana river and in some other parts (i.e. in the hinterland of Velika plaža) there are alluvial forest fragments, with prevailing White Poplar *Populus alba*, White Willow *Salix alba*, Narrow-leafed Ash *Fraxinus angustifolia,* Pedunculate Oak *Quercus robur* and Common Alder *Alnus glutinosa* stands. Bojana river is the most water-rich river in Montenegro, flowing a short distance of about 20 km as a direct drain of Skadar Lake to the Adriatic Sea. An old river oxbow has formed a freshwater Šasko Lake, rich with reed beds of the Common Reed *Phragmites australis* and Cattail *Typha sp.*, willow stands and stands of sedges. In some parts of higher and drier alkaline marshes there are thick stands of tamarisks *Tamarix sp*. The arable areas are mostly small-scale agricultures with small fields, scattered meadows and pastures and hedges of bushes or trees. This mosaic cultural landscape is partly turned into different smaller plantations, mostly of mandarins, olives or peaches and loosely, yet relatively continuously inhabited with individual houses or small settlements.

QUALITY AND ORNITHOLOGICAL IMPORTANCE

Bojana Delta is one of the most important wetland complexes not only in Montenegro, but of the whole Adriatic coast. The variety of habitats and its geographical position that connects the narrowest part of the Adriatic Sea with southern part of Apennine peninsula and further to North Africa puts this area at the central point of the so called Adriatic Flyway, a migratory corridor for a large portion of birds coming from winter quarters to the breeding grounds in Europe and vice versa. The importance of the Bojana Delta is well known and relatively thoroughly researched, putting this site in [lead/principle/prime?] position amongst the Montenegrin SPAs not only in terms of bird richness, but also in terms of understanding its ecological functions, distribution, phenology and abundance of birds that occur in the area. As many as 40 species of birds reach SPA threshold criteria in Bojana Delta, whether during breeding season, wintering or migration. Many of them, especially the species that are restricted to marine environment, i.e. Red-throated Loons *Gavia stellata*, Scopoli's Sharewater *Calonectris diomedea*, or Velvet Scoter *Melanitta fusca* only appear in regular or significant numbers at the mouth of Bojana river, which is the

location of the highest concentration of migrating and wintering birds in this SPA. Ada Island and Velika plaža are migratory spots of international importance for at least 7 species of ducks, gulls and a loon, i.e. Garganey *Spatula querquedula*, Northern Shoveler *S. clypeata*, Little *Hydrocoloeus minutus* and Mediterranean Gulls *Larus melanocephalus*. The area is also incredibly important as a breeding site for many colonial waterbirds, i.e. Pygmy Cormorant *Microcarbo pygmaeus*, Eurasian Spoonbill *Platalea leucorodia*, Little Egret *Egretta garzetta*, Squacco *Ardeola ralloides* and Night Herons *Nyctycorax nyctycorax*, but also for waders, such as Eurasian Thick-knee *Burhinus oedicnemus*, European Oystercatcher *Haemaotopus ostralegus*, Kentish Plover *Charadrius alexandrinus* and Collared Pratincole *Glareola pratincola*. The alluvial forests are a breeding habitat for important populations of Turtle Dove *Streptopelia turtur*, Levant Sparrow-hawk *Accipiter brevipes*, Syrian Woodpecker *Dendrocopos syriacus* and few pairs of European Rollers *Coracias garrulus*. The remaining pastures of Štoj are extremely important during the migration period for huge flocks of Barn *Hirundo rustica* and Red-rumped Swallows *Cecropis daurica*, Sand Martins *Riparia riparia*, Yellow Wagtails *Motacilla flava*, Whinchats *Saxicola rubetra*, Wood Larks *Lullula arborea* and many other passerines. Finally the coastal marshes of Velika plaža host the only population of the elusive Baillon's Crake *Zapornia pusilla* in Montenegro and possibly Eastern Adriatic.

CRITERIA SPECIES	CRITERION	THRESHOLD	POPULATION ESTIMATE			
			MIN	MAX	UNIT	SEASON
Melanitta fusca	C1, C6	60 i, 15 i	111		i	M
Aythya ferina	C1	60 i	1.95		i	M
Aythya nyroca	C1, C2, C6	60 i, 500 i, 15 i	1.9		i	M
Spatula querquedula	C3	20.000 i	63.5		i	M
Spatula clypeata	C3	4.500 i	11		i	M
Mareca penelope	C3	3.000 i	4.3		i	M
Streptopelia turtur	C1	20 p	75	150	p	B
Zapornia pusilla	C6	Top 5 areas (1.)	55	70	p	B
Gavia stellata	C2	100 i	100	110	i	W
Calonectris diomedea	C6	Top 5 areas (1.)		22	i	M
Platalea leucorodia	C6	Top 5 areas (1.)	16	35	p	B
Plegadis falcinellus	C6	Top 5 areas (3.)		40	i	M
Ixobrychus minutus	C6	Top 5 areas (2.)	5	20	p	B
Nyctycorax nyctycorax	C6	Top 5 areas (1.)	35	39	p	B
Ardeola ralloides	C6	Top 5 areas (2.)	79	104	p	B
Ardea alba	C6	Top 5 areas (3.)	78	135	i	W
Egretta garzetta	C6	Top 5 areas (1.)	204	281	p	B
Pelecanus crispus	C6	Top 5 areas (3.)		23	i	M
Microcarbo pygmaeus	C6	Top 5 areas (2.)	30	420	p	B

CRITERIA SPECIES	CRITERION	THRESHOLD	POPULATION ESTIMATE			
			MIN	MAX	UNIT	SEASON
Burhinus oedicnemus	C6	Top 5 areas (1.)	15	20	p	B
Haematopus ostralegus	C1, C6	60 i, Top 5 areas (1.)	774		i	M
Recurvirostra avosetta	C6	Top 5 areas (2.)	372		i	M
Himantopus himantopus	C6	Top 5 areas (3.)	36		i	M
Pluvialis apricaria	C6	Top 5 areas (2.)	37		i	M
Charadrius alexandrines	C6	Top 5 areas (2.)	5	10	p	B
Numenius arquata	C1	60 i	1.176		i	M
Limosa limosa	C1	60 i	1.609		i	M
Calidris pugnax	C6	Top 5 areas (3.)	600		i	M
Glareola pratincola	C6	Top 5 areas (2.)	5	10	p	B
Hydrocoloeus minutus	C2, C6	1000 i, Top 5 areas (1.)	9	36	i	M
Larus melanocephalus	C2, C6	770 i, Top 5 areas (1.)	6		i	M
Sternula albifrons	C6	Top 5 areas (2.)	300		i	Non-B
Sterna hirundo	C6	Top 5 areas (3.)	100		i	Non-B
Thalasseus sandvicensis	C6	Top 5 areas (1.)	507		i	W
Circus aeroginosus	C6	Top 5 areas (2.)	73		i	M
Accipiter brevipes	C6	Top 5 areas (1.)	11	40	p	B
Alcedo atthis	C6	Top 5 areas (4.)	9	30	p	B
Dendrocopos syriacus	C6	Top 5 areas (3.)	42		p	B
Acrocephalus melanopogon	C6	Top 5 areas (2.)	Hundreds (turnover)		i	M
Anthus pratensis	C1	90 i	Hundreds (turnover)		i	M

THREATS, PRESSURES AND ACTIVITIES WITH IMPACTS ON THE SITE

Being a large and not intensively populated area at the coast the main threat of the Bojana Delta has been and remains the growing illegal and legal urbanisation that is both poorly controlled and planned. The summer influx of tourists that exceed the number of sedentary residents by several 10-times are a huge environmental burden, adding to communal pollution, disturbance, solid waste pollution and fragmentation of coastal habitats, especially dunes. Illegal hunting of birds is widespread and control is poor.

CONSERVATION MEASURE RECOMMENDATIONS

Sustainable and nature-oriented responsible urban planning and careful management of people visiting this area, with restricted access areas and clear signalization of marked trails.

BRATOGOŠT

AREA	*49.225 ha*	
SPA CRITERIA	*C1, C6*	
SITE CENTRE LOCATION	*42°84'69.09'' N*	*18°59'22.26'' E*
LAND COVER, LAND USE, HABITATS	*transitional woodland/shrub*	*38%*
	broad-leaved forest	*30%*
	agriculture, natural areas	*12%*
	sparsely vegetated areas	*9%*
	natural grassland	*8%*
	mixed forest	*2%*
	water bodies	*1%*
PROTECTION STATUS (HA, %)	/	
ADMINISTRATIVE REGIONS	*Nikšić*	

GENERAL SITE CHARACTER

Bratogošt is a dry and hilly karstic area, geographically and historically better known as the area of Oputne Rudine and Banjani. It is located in Western Montenegro, bordering with Bosnia and Herzegovina to the West, Grahovo to the South and with the slopes of Njegoš and Golija mountains to the East. Climate is mainly continental, with sub-Mediterranean influence, and the average altitude is between 800 and 1.000 m a.s.l., with few peaks and ridges above 1.300 m a.s.l. This area is poorly populated due to scarcity of surface water, with the major landscape characteristic being loose forest and forest stands, mainly of oaks (i.e. Turkey Oaks *Quercus cerris* and Downy Oaks *Q. pubescens*), Oriental Hornbeams *Carpinus orientalis*, Manna Ashes *Fraxinus ornus*, different, mostly thorny shrubs and traditional agriculture, restricted to dolinas and small valleys. While many of the numerous ridges and slopes are bare or grassy, sparsely vegetated with bushes and solitary trees, numerous small dolinas and valleys are relatively lush and green, intersected with stone walls and bushy hedges.

Sombre Tit *Poecile lugubris*, @B.Rubinić

QUALITY AND ORNITHOLOGICAL IMPORTANCE

The dryer part of the Bratogošt SPA with sparse grass and solitary oaks and ashes is the most important habitat for Ortolan Bunting in Montenegro. In perfect spots colonial distribution can be observed, with densities of around 50 pairs/ km², and males singing on loose leks of 5 to 10 birds. Similar and adjacent drier areas are inhabited by Tawny Pipits *Anthus campestris*, while the extensive areas of forest edges, pastures and mosaic cultural landscape provide prime habitat for the largest population of Wood Larks *Lullula arborea* in the country. Rocky outcrops of peaks, slopes and mountain ridges are inhabited by a significant population of Rock Partridges and are hunting ground for Short-toed Snake Eagle *Circaetus gallicus*, Golden Eagle *Aquila chrysaetos* and Eagle Owl *Bubo bubo*. As a contrast to these dry areas, little valleys, dolinas (karstic funnel shaped depressions that are usually filled with fertile soil at the bottom) and the surroundings of rare villages, are moister and through centuries maintained as mosaic cultural landscapes of fields, pastures, forest stands, bushy and rocky hedges, and water wells and pools for domestic animals. These areas are home to the largest population of Barred Warbler *Sylvia nisoria* in Montenegro, while in similar areas with higher trees we can find significant numbers of Lesser Grey Shrikes *Lanius minor* and Turtle Doves *Streptopelia turtur*.

CRITERIA SPECIES	CRITERION	THRESHOLD	POPULATION ESTIMATE			
			MIN	MAX	UNIT	SEASON
Alectoris graeca	C1	40 p	135	200	p	B
Streptopelia turtur	C1	20 p	23	47	p	B
Lanius minor	C6	Top 5 sites (3.)	10	20	p	B
Lullula arborea	C6	Top 5 sites (1.)	638	1.277	p	B
Sylvia nisoria	C6	Top 5 sites (1.)	861	1.722	p	B
Anthus campestris	C6	Top 5 sites (4.)	44	88	p	R
Emberiza hortulana	C6	Top 5 sites (1.)	100	300	p	B

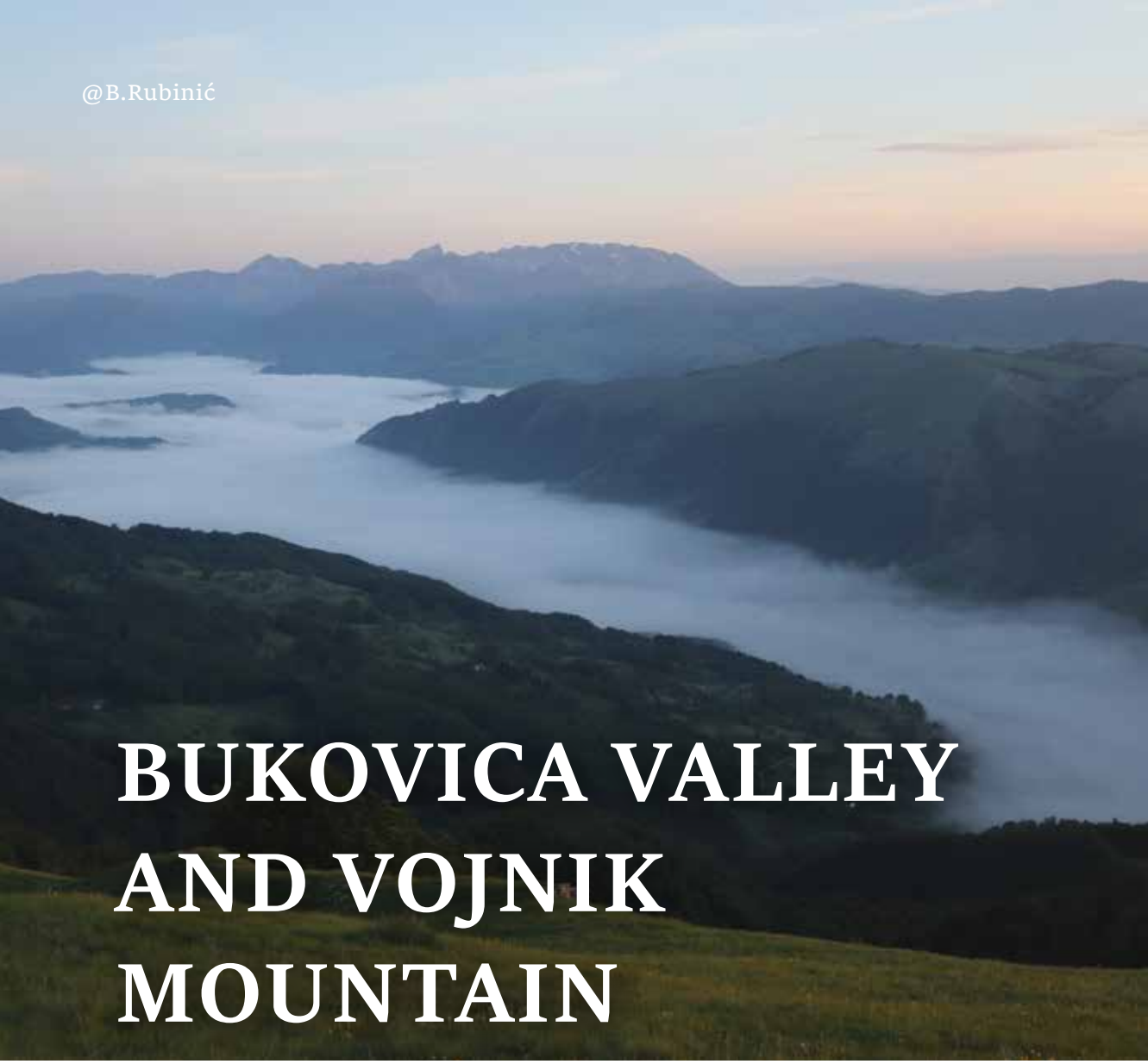
THREATS, PRESSURES AND ACTIVITIES WITH IMPACTS ON THE SITE

The main threat of this area is land abandonment. Poor demographic situation has led to massive land abandonment and loss of cultural landscapes, that are being overgrown with forest succession.

CONSERVATION MEASURE RECOMMENDATIONS

Encouraging of alternative sustainable livelihoods that would help maintain the main traditional features of mosaic cultural landscape.


@J.Figelj



BUKOVICA VALLEY AND VOJNIK MOUNTAIN

AREA	*11.197 ha*	
SPA CRITERIA	*C6*	
SITE CENTRE LOCATION	*42°93'56.33'' N*	*19°08'54.99'' E*
LAND COVER, LAND USE, HABITATS	*broad-leaved forest*	*44%*
	transitional woodland/shrub	*26%*
	agriculture, natural areas	*15%*
	coniferous forest	*8%*
	sparsely vegetated areas	*5%*
	natural grassland	*2%*
PROTECTION STATUS (HA, %)	/	
ADMINISTRATIVE REGIONS	*Šavnik, Nikšić, Plužine*	

GENERAL SITE CHARACTER

The area of Vojnik Mountain and Bukovica river lies in the NW part of Montenegro and is characteristic for rugged relief, steep forested and rocky slopes, cliffs, crevices and deep river canyons. Geomorphologically Vojnik Mountain is a relatively isolated cone-shaped massif, reaching 1.998 m high on Veliki Vojnik (Big Vojnik) peak, connected with Golija mountain ridge from NW, Moračke Mountains from SE and divided from Durmitor mountain massif in the N by Komarnica river and Bukovica river to the E. Lower slopes of Vojnik and steep slopes of Komarnica river canyon are mostly covered with Balkan Beech *Fagus moesiaca* and oak *Quercus sp*. forests, while higher areas of the Vojnik mountain are overgrown with old and hardly accessible coniferous forests, mainly of Norway Spruce *Picea abies* and Silver Fir *Abies alba*. Bukovica river originates in Durmitor mountains and flows in a natural stream in SE direction through a steep limestone canyon. The water in Bukovica river is due to the absence of larger settlements and industry of highest quality throughout its 42 km of watercourse. Small patches of mosaic cultural landscape of orchards, pastures and small fields can be found in the sunniest and flattest areas of Bukovica Valley.

QUALITY AND ORNITHOLOGICAL IMPORTANCE

The deep canyon of Bukovica and Komarnica rivers with its steep rocky cliffs are an ideal nesting site of Golden Eagle. Due to the vicinity of high mountain plateaus of Moračke mountains, Sinjajevina and Durmitor mountans and the slopes of Vojnik mountain one of highest concentrations of Golden Eagles *Aquila chrysaetos* can be found nesting in Bukovica canyon. There is also a fair number of nesting European Honey Buzzards *Pernis apivorus* and probably a few pairs of Short-toed Snake Eagles *Circaetus gallicus* nesting in the area and hunting in nearby mountain plateaus and forests.

Rocky slopes of Vojnik Mountain are a habitat of a small population of Rock Partridge *Alectoris graeca* and Eagle Owls *Bubo bubo*, while the remote conifer forests of N side of Vojnik mountain host a small population (around 10 males) of Capercaillie *Tetrao urogallus*. In lower areas of cultural landscape Barred Warblers *Sylvia nisoria* are abundant, locally reaching high densities, while in the grassiest and most humid areas in valley pockets a small population of Corncrakes *Crex crex* can be found. Drier open grassy and areas with sparse scrubs and individual trees are a habitat of Wood Larks *Lullula arborea*.

CRITERIA SPECIES	CRITERION	THRESHOLD	POPULATION ESTIMATE			
			MIN	MAX	UNIT	SEASON
Alectoris graeca	C1	40 p	100	150	p	B
Crex crex	C6	Top 5 sites (4.)	5	7	p	B
Aquila chrysaetos	C6	Top 5 sites (3.)	4		p	B
Sylvia nisoria	C6	Top 5 sites (5.)	205	411	p	B

THREATS, PRESSURES AND ACTIVITIES WITH IMPACTS ON THE SITE

The main threat of this area are occasional ideas of hydropower construction that would not only harm the natural course of rivers and streams of this area, but also inevitably expose previously inaccessible forest patches to erosion and logging. Land abandonment is an issue especially in higher areas, where pastures are being continuously overgrown with succession of scrubs and trees, making it less attractive for Rock Partridges and other species of rocky landscapes. Cutting of large mature trees and opening of new logging areas should be carefully controlled.

CONSERVATION MEASURE RECOMMENDATIONS

Hydropower development should be banned or a subject of extremely cautious assessment and geographical location. Encouraging of alternative sustainable livelihoods that would help maintain mountainous pastures and traditional mosaic cultural landscape. Cutting of large mature trees and opening of new logging areas should be carefully controlled.

@B.Rubinić

BULJARICA

AREA	*205 ha*	
SPA CRITERIA	*C6*	
SITE CENTRE LOCATION	*42°18'91.96'' N*	*18°97'54.14'' E*
LAND COVER, LAND USE, HABITATS	*reed bed*	*63%*
	agriculture, natural areas	*34%*
	broad-leaved forest	*2%*
	sea and ocean	*1%*
PROTECTION STATUS (HA, %)	*Buljarica beach Monument of Nature 4 ha (2%)*	
ADMINISTRATIVE REGIONS	*Budva*	

GENERAL SITE CHARACTER

Buljarica is a brackish cove that lies in the central part of Montenegrin coast, at the slopes of Paštrovići Mountain, between the two coastal towns: Petrovac and Sutomore. It is embedded between two hills, Resovo brdo and Dubovica. Although not large, it is with 200 ha still the biggest remaining cove at the Montenegrin part of the Adriatic coast. The central area of Buljarica consists of a 2,250 m long gravel beach, a semi-natural marshland, which was irrigated into fields in the beginning of the 20th Century and is nowadays mostly covered with reeds. In the back of the cove there are tall hay meadows, pastures, loose stands of old Downy Oaks *Quercus pubescens*, forest fragments of Narrow-leafed Ash *Fraxinus angustifolia*, some smaller orchards and olive groves. Buljarica is one of the few remaining brackish marshland complexes and wetlands in general on the Montenegrin coast. Although previously meliorated, Buljarica has retained a lot of its original natural character and hosts a number of restricted-range and/or threatened animal and plant species that occur there, either as residents or during migrations. A major part of the Buljarica cove is a wetland ecosystem, which attracts smaller numbers of waterbirds migrating along the Adriatic Sea or passing it during spring and autumn migration.

Albanian Frog *Pelophylax shqipericus*, @M.Jovićević

QUALITY AND ORNITHOLOGICAL IMPORTANCE

Due to its limited size and semi-natural character Buljarica isn't as rich in terms of bird diversity or populations, whether breeding or migrating, than larger wetlands on the Montenegrin coast, especially Bojana Delta and Ulcinj Salina. Although many ducks, egrets, herons and waders migrate through the site, not that many stop over and no species were recorded so far in large enough numbers to trigger any of the criteria necessary for SPA selection. The wooded fragments of Buljarica's hinterland are a breeding habitat of Levant Sparrowhawk *Accipiter brevipes*, Syrian Woodpecker *Dendrocopos syriacus*, and even European Roller *Coracias garrulous* was breeding there at least in 2008. The most important bird species of Buljarica is Moustached Warbler *Acrocephalus melanopogon*. This species was completely unknown in Montenegro until 2018 when a significant number of individuals were discovered to be migrating through Buljarica during the autumn migration along the Adriatic coast. Among the large estimated turnover, also a high number of ringed individuals proves the international importance of this site.

CRITERIA SPECIES	CRITERION	THRESHOLD	POPULATION ESTIMATE			
			MIN	MAX	UNIT	SEASON
Acrocephalus melanopogon	C6	Top 5 sites (1.)	400	800	i	M

THREATS, PRESSURES AND ACTIVITIES WITH IMPACTS ON THE SITE

These types of habitats are rapidly disappearing at the Montenegrin coast, mostly due to the expansion of urban development. Due to its small size, disturbance, especially in summer months when the area gets a large influx of tourists, can be a threat to the many fragile and limited habitats of Buljarica.

CONSERVATION MEASURE RECOMMENDATIONS

Sustainable and nature-oriented responsible urban planning and careful management of people visiting this area, with restricted access areas and clear signalization of marked trails.

@M.Jovićević

@M.Jovićević

ĆEMOVSKO POLJE

AREA	*924 ha*	
SPA CRITERIA	*C6*	
SITE CENTRE LOCATION	*42°39'68.70'' N*	*19°28'65.15'' E*
LAND COVER, LAND USE, HABITATS	*pastures*	*89%*
	dump site	*3%*
	transitional woodland/shrub	*3%*
	discontinuous urban fabric	*1%*
	vineyards	*1%*
	airport	*1%*
	complex cultivation patterns	*1%*
PROTECTION STATUS (HA, %)	/	
ADMINISTRATIVE REGIONS	*Podgorica, Tuzi*	

GENERAL SITE CHARACTER

Ćemovsko polje is a karst polje, part of the Zeta plain in the central part of Southern Montenegro. It is located SE of Podgorica, from N and NE it is limited by the slopes of Kuči mountains and Cijevna river canyon, from W by Podgorica city and from S and SE by the plains of Zeta valley and N shores of Skadar Lake. Once natural grasslands and stony steppe which grew at the fluvoglacial and alluvial gravel deposits of the Cijevna river (Cem in Albanian, hence the name), are nowadays mostly transformed into large vineyards and intensive peach plantations, stretching over about two thirds of the area. The remaining fragments of the steppe are most extensive in the NE part of the polje, in the vicinity of villages Dinoša, Milješ and Rogame. The vegetation is scarce and mostly consists of grasslands, which are used as pastures, with rare scattered bushes, small orchards and dry fields that are mostly irrigated. The climate is Mediterranean. This SPA consists of the largest fragments unconnected natural and semi-natural steppe habitat. These are intersected with vineyard and peach plantations, dump sites and urban-industrial areas that are not included within the borders of the proposed SPA.

European Thick-knee *Burhinus oedicnemus*, @M.Jovićević

QUALITY AND ORNITHOLOGICAL IMPORTANCE

Being a unique area in Montenegro in terms of specific steppe habitat, Ćemovsko polje is characterized by significant populations of typical steppe birds. Among Annex I passerine species these are Calandra *Melanocorypha calandra* and Greater Short-toed Lark *Calandrella brachydactyla* and Tawny Pipit *Anthus campestris*. Relatively large populations of these species are a clear sign that the remaining steppe habitat, although very threatened by continuous degradation and fragmentation, is still in good ecological condition. A very prominent indicator of the state of the habitat is also the stagnating population of about 5-10 pairs of Eurasian Thick-knee *Burchinus oedicnemus* that breeds in parts of most extensive steppe. Ćemovsko polje is important also during the migration, being situated between Skadar Lake and the Bjelopavlići Valley migratory corridor. Flocks of Lapwings *Vanellus vanellus*, Red-footed Falcons *Falco vespertinus*, Lesser Kestrels *F. naumanni*, Montagu's *Circus pygargus* and Marsh Harriers *C. aeroginosus*, European Honey Buzzards *Pernis apivorus*, European Rollers *Coracias garrulus* and Meadow Pipits *Anthus pratensis* migrate over Ćemovsko polje and regularly stop there for rest and feeding, especially during spring migration.

CRITERIA SPECIES	CRITERION	THRESHOLD	POPULATION ESTIMATE			
			MIN	MAX	UNIT	SEASON
Burhinus oedicnemus	C6	Top 5 sites (3.)	5	10	p	B
Vanellus vanellus	C1	60 i	500	1000	i	M
Falco vespertinus	C6	15 i	20	30	i	M
Melanocorypha calandra	C6	Top 5 sites (1.)	70	80	p	B
Calandrella brachydactyla	C6	Top 5 sites (1.)	150	170	p	B
Anthus campestris	C6	Top 5 sites (5.)	35	40	p	B
Anthus pratensis	C1	90 i	hundreds		i	M

THREATS, PRESSURES AND ACTIVITIES WITH IMPACTS ON THE SITE

Ćemovsko polje is the only area in Montenegro with extensive steppe habitat and about two thirds of its natural habitat was lost by 1982, by turning it into extensive vineyards and peach plantations that are irrigated by water from the Cijevna river. The remaining fragments are heavily threatened by urbanisation extensions of Podgorica and Tuzi urban centres, degradation into industrial areas, official and unofficial dump sites, the Podgorica airport and the growing road network. Additional threats are uncontrolled waste disposal, degradation of natural habitats with an uncontrolled network of dirt roads, conversion into fields and pastures, gravel extraction from Cijevna river that passes the area and pollution by pesticides from the nearby plantations.

CONSERVATION MEASURE RECOMMENDATIONS

Sustainable and nature-oriented responsible urban planning and careful management of habitat use of the area. An immediate formal protection and efficient management of the remaining for Montenegro rare and unique ecosystem is urgently required.

DURMITOR

AREA	60.944 ha	
SPA CRITERIA	C1, C6	
SITE CENTRE LOCATION	43°12'87.39'' N	19°16'87.71'' E
LAND COVER, LAND USE, HABITATS	coniferous forest	22%
	transitional woodland/shrub	15%
	mixed forest	14%
	broad-leaved forest	11%
	natural grassland	11%
	sparsely vegetated areas	10%
	agriculture, natural areas	9%
	pastures	5%
	complex cultivation patterns	1%
	bare rock	1%
PROTECTION STATUS (HA, %)	Durmitor National Park 32.519 ha (53,4%)	
ADMINISTRATIVE REGIONS	Žabljak, Plužine, Pljevlja, Mojkovac, Šavnik	

GENERAL SITE CHARACTER

Durmitor is the largest mountain massif in Montenegro, situated in NW of the country. Durmitor lies on a high alpine plateau with an altitude of approximately 1.400 m a.s.l., divided from surrounding mountains by deep canyons of Tara in the North, Komarnica from the South and Sušica from the West. In the center of the plateau high mountains reaching over 2.000 m a.s.l. are positioned, with the highest being Bobotov Kuk, with only few meters after the Maja Kolata in Prokletije the second highest mountain in Montenegro, reaching 2.522 m a.s.l. Different ecosystems can be found in Durmitor. The lowest regions are characterized by deep river canyons, surrounded by rocky cliffs, with most famous being Tara canyon, with 1333 m known as the deepest river canyon in Europe. The Durmitor plateau, known also as lake plateau is an extensive alpine plain, partly grassy, partly covered (in E part) with extensive Scots Pine Pinus sylvestris, Norway Spruce *Picea abies* and Silver Fir *Abies alba* coniferous forests that become associated with broadleaf species, especially with Balkan Beech *Fagus moesiaca* and the Sycamore Maple *Acer pseudoplatanus* towards the edge and bottom of the river canyons. Higher parts of mountains in the centre of the massif are covered with similar mixed and coniferous forests at the slopes, gradually changing into stands of Creeping Pine *Pinus mugo* at the tree line and mountain pastures and bare rocks towards the peaks. A substantial part of the mountain massif including the whole Tara river canyon was declared as National Park in 1952 and included on the list of UNESCO Natural Heritage in 1980. 18 glacial lakes and 48 peaks above 2.000 m a.s.l. make Durmitor a very attractive and well known tourist and mountaineering destination.

QUALITY AND ORNITHOLOGICAL IMPORTANCE

As it is a typical high-mountainous area, the most characteristic birds of Durmitor area are birds of mountainous forests and high alpine environment, mostly glacial relict populations of otherwise boreal species. Durmitor has some well preserved coniferous, mixed and also beech forests. The best known are a strict forest reserve Crna poda with over 400 years old and over 50 m tall trees of Black Pine *Pinus nigra* and Balkan Beech *Fagus moesiaca*, an old-growth beech forest at the N side of Zminje Lake, virgin Norway Spruce *Picea abies* and Silver Fir *Abies alba* forest along Mlinski potok and extensive forests of Scots Pine *Pinus sylvestris* in Šaranci area. These and other forests in Durmitor that are still in good ecological condition are inhabited by significant populations of typical boreal species. Durmitor is the most important site in the country for Capercaillie *Tetrao urogallus* with about 50% of the national population living here, making some of the largest leks, not only in Montenegro and the Balkans, but in whole of Europe. Durmitor is also the first area in Montenegro for Three-toed Woodpecker *Picoides tridacytlus* and second best for Hazel Grouse *Bonasa bonasia* and Boreal Owl *Aegolius funereus*. River canyons of Tara and Sušica and some other cliffs in the park are nesting site of 4-6 pairs of Golden Eagle Aquila chrysaetos and some 10-15 pairs of Eagle Owl *Bubo bubo*, while Rock Partridges *Alectoris graeca* and Horned Larks *Eremophila alpestris balcanica* and Rock Thrushes *Monticola saxatilis* inhabit high bare rocky areas. Open grassy areas of Durmitor plateau are important for Wood Larks *Lullula arborea*, Tawny Pipit *Anthus campestris* and the hunting Golden and Short-toed Snake Eagles *Circaetus gallicus*. Occasionally is the area visited by small flocks or individual Griffon Vultures *Gyps fulvus* that breed in nearby Uvac canyon in Serbia.

CRITERIA SPECIES	CRITERION	THRESHOLD	POPULATION ESTIMATE			
			MIN	MAX	UNIT	SEASON
Alectoris graeca	C1	40 p	100	150	p	B
Bonasa bonasia	C6	Top 5 sites (2.)	290	580	p	B
Tetrao urogallus	C6	Top 5 sites (1.)	400	500	m	B
Glaucidium passerinum	C6	Top 5 sites (3.)	57	114	P	B
Aegolius funereus	C6	Top 5 sites (2.)	108	217	p	B
Bubo bubo	C6	Top 5 sites (4.)	10	15	p	B
Aquila chrysaetos	C6	Top 5 sites (2.)	4	6	p	B
Alcedo atthis	C6	Top 5 sites (5.)	5	10	p	B
Picoides tridactylus	C6	Top 5 sites (1.)	243	485	p	B
Lullula arborea	C6	Top 5 sites (3.)	217	434	p	B

THREATS, PRESSURES AND ACTIVITIES WITH IMPACTS ON THE SITE

Large part of the Durmitor area including Tara canyon is protected as a National Park and holds an eminent title of the UNESCO World Heritage. That however didn't stop the area from the illegal and chaotic urbanization, unsustainable illegal and sometimes also legal logging and disturbance by 4x4 vehicles and similar. In addition some of the ecologically most valuable areas like Šaranci area are not included in the park borders although they are extremely important or even most important areas for many of the criteria species. This area should be included not into the buffer zone (IV level protection zone), but at least as zone with II or III level of protection, in selected areas (areas with highest densities or reproductive value for selected criteria species – i.e. largest Capercaillie leks) as I level protection.

CONSERVATION MEASURE RECOMMENDATIONS

Sustainable and nature-oriented responsible urban planning and careful management of habitat use of the area. Banned logging in sensitive areas, even for sanitary purposes and heating of local inhabitants. Mitigation measures should be foreseen. An immediate formal protection and efficient management of the remaining for Montenegro rare and unique ecosystem is urgently required.

HAJLA

AREA	*9.115 ha*	
SPA CRITERIA	*C6*	
SITE CENTRE LOCATION	*42°79'34.06'' N*	*20°12'56.16'' E*
LAND COVER, LAND USE, HABITATS	*coniferous forest*	*62%*
	mixed forest	*17%*
	transitional woodland/shrub	*8%*
	natural grassland	*6%*
	agriculture, natural areas	*4%*
	sparsely vegetated areas	*2%*
	pastures	*1%*
PROTECTION STATUS (HA, %)	/	
ADMINISTRATIVE REGIONS	*Rožaje*	

GENERAL SITE CHARACTER

Hajla refers both to a 2403 m high bare mountain and an extensive high altitude area of coniferous forests in the NE part of Montenegro, on the border with Kosovo that lies at the slopes of the mountain. Hajla mountain ridge is a part of the NE arm of Prokletije, the longest and highest mountain chain in Montenegro, located at the borders with Albania and Kosovo and is in the South connected to the lower Cmiljevica mountain. From the West Hajla is divided by lower Murgoš plateau from Bogska river, from the East by Ahmica-Štedim plateaus with Hajla pass and from the North by Rožaje basin. Largest part of Hajla is covered with coniferous forests, mostly of Norway Spruce *Picea abies* and Silver Fir *Abies alba*, with healthy stands of Macedonian Pine *Pinus peuce* higher areas. Only then in the highest areas above 2.100 m a.s.l. mountain pastures, rocky outcrops and alpine grasslands can be found. Hajla's forests are mostly managed for timber production and only most remote and inaccessible parts are left unmanaged.

QUALITY AND ORNITHOLOGICAL IMPORTANCE

With its wealth of coniferous forests Hajla is a typical habitat for many boreal species of birds that are found in many high altitude coniferous forests in the northern part of the country. Due to its relatively small overall area, Hajla doesn't reach as many criteria thresholds for SPA selection as some other areas with similar, yet in absolute size more extensive habitats (i.e. Durmitor, Prošćenske planine, Ljubišnja). The species are however same or similar as in comparable SPAs: Capercaillie *Tetrao urogallus*, Hazel Grouse *Bonasa bonasia*, Three-toed *Picoides tridactylus* and Black Woodpeckers *Dryocopus martius*. Although these birds don't reach SPA criteria thresholds in terms of absolute populations, the breeding densities are among highest in the country for majority of them, indicating the importance and state of Hajla's boreal forest habitats. Being part of the larger area of Prokletije mountains that spread over three countries and are mostly protected as National Park in all of them, Hajla is an important ecological extension of this area in this part of Montenegro and a natural corridor that leads to ecologically related areas further on in Serbia's Đerekare region. The only species that reaches the threshold for Hajla SPA is Boreal Owl *Aegolius funereus*, with 61 to 122 breeding pairs.

CRITERIA SPECIES	CRITERION	THRESHOLD	POPULATION ESTIMATE			
			MIN	MAX	UNIT	SEASON
Aegolius funereus	C6	Top 5 sites (3.)	61	122	p	B

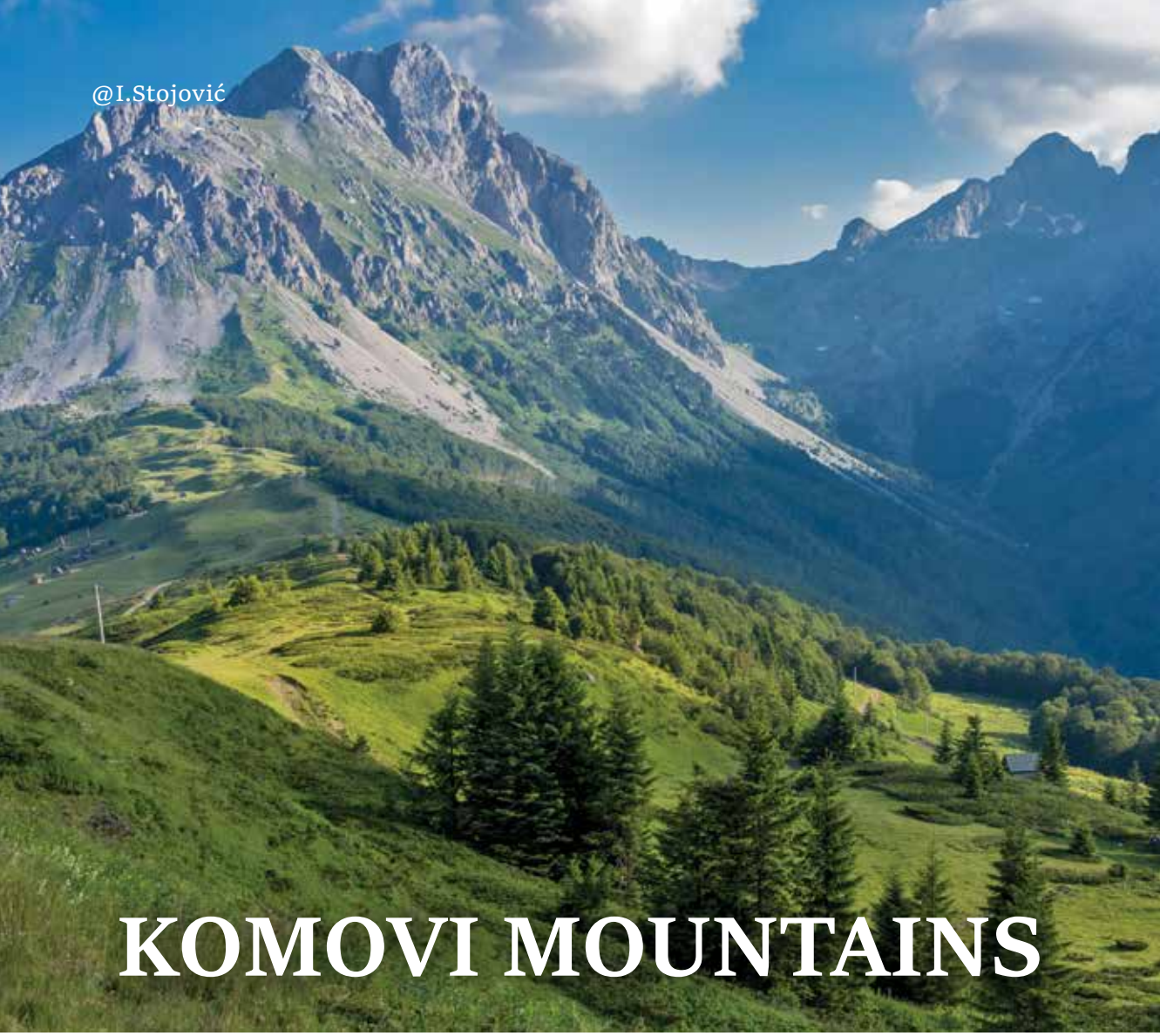
THREATS, PRESSURES AND ACTIVITIES WITH IMPACTS ON THE SITE

Main threat of the area is unsustainable logging. Few areas of Hajla (i.e. herdsmen's huts area of Bandžov) are and can be a subject of continuous unplanned urbanisation, while disturbance by 4x4 vehicles can pose a threat to some species of birds and other animals.

CONSERVATION MEASURE RECOMMENDATIONS

Sustainable and if necessary locally banned logging in sensitive areas (establishment of forest reserves) and sustainable nature-oriented and environmentally-responsible urban planning in herdsmen's huts areas. Banned 4x4 vehicles use in sensitive areas and everywhere outside official roads.

Satan's Bolete *Boletus satanas*, @B.Rubinić



KOMOVI MOUNTAINS

AREA	*27.663 ha*	
SPA CRITERIA	*C1*	
SITE CENTRE LOCATION	*42°68'44.40'' N*	*19°65'11.74'' E*
LAND COVER, LAND USE, HABITATS	*mixed forest*	*40%*
	broad-leaved forest	*28%*
	agriculture, natural areas	*9%*
	transitional woodland/shrub	*8%*
	natural grassland	*6%*
	sparsely vegetated areas	*6%*
	bare rock	*3%*
PROTECTION STATUS (HA, %)	*Nature Park Komovi 15.692 ha (56,7%)*	
ADMINISTRATIVE REGIONS	*Kolašin, Andrijevica, Podgorica*	

GENERAL SITE CHARACTER

Komovi Mountains are a high, relatively isolated mountainous massif in the Eastern part of Montenegro, on the border with Albania. The crown shaped mountains spread in different directions, with main being W-E, and are divided from other mountains with small rivers: Drcka and Kraštica from the North, Tara and Opasanica from the West and Kutska rijeka and Zlorječica from the East. From the South Komovi are connected with even higher and mightier Prokletije mountains. Two high, isolated cone-shaped peaks make the centre of the massif – Kučki Kom (2487 m a.s.l.) and Vasojevićki Kom (2461 m a.s.l.). Main habitat of the mountain slopes is Dinaric beech forest *Omphalodo-Fagetum Dinaricum*, with extensive stands of old-growth forests still being a common sight, although more areas are being open for logging and the use of timber more widespread, with the last remaining primeval forests (i.e. Mojanska rijeka) starting to be harvested in the past decade or so. In higher regions conifers become more abundant and almost half of the Komovi Mountain area is covered with mixed forests, where beech *Fagus moesiaca* becomes associated with Silver Fir *Abies alba* and Norway Spruce *Picea abies*. Bosnian Pines *Pinus heldreichii* can be found in the most hostile areas, at the cliff-tops and steep rocky slopes. There are still few active mountain herder's seasonal dwellings (katuni) in the area, with pastures and natural grasslands spreading above the tree line and around rare settlements. More than half of the area, unfortunately mostly highest areas, are protected as Nature Park.

QUALITY AND ORNITHOLOGICAL IMPORTANCE

Forest habitats of Komovi are mostly good and host high densities of characteristic bird species, however the overall area of this SPA isn't very large, and none of the forest species reaches thresholds for the inclusion among five best areas in the country. Beech forests are a typical habitat for White-backed *Dendrocopos leucotos* and locally Middle-spotted Woodpeckers *Leiopicus medius*, while mixed forests and highest parts where conifers prevail over beech are more suitable for a small population of some 24 males of Capercaillie *Tetrao urogallus*, for Boreal Owls *Aegolius funereus*, Three-toed *Picoides tridactylus* and Black Woodpeckers *Dryocopus martius*. Alpine pastures, natural grasslands and rock crevices are home to some 130-170 pairs of Rock Partridges *Alectoris graeca*, the most significant bird species of this area.

CRITERIA SPECIES	CRITERION	THRESHOLD	POPULATION ESTIMATE			
			MIN	MAX	UNIT	SEASON
Alectoris graeca	C1	40 pairs	150	200	p	B

@B.Rubinić

THREATS, PRESSURES AND ACTIVITIES WITH IMPACTS ON THE SITE

Main threat of the area is unsustainable logging and opening of last remaining primeval forests in Montenegro and in Europe for timber extraction. Few areas of Komovi (i.e. herdsmen's huts area of Štavna) are and can be a subject of continuous unplanned urbanisation, while disturbance by 4x4 vehicles can pose threat to some species of birds and other animals.

CONSERVATION MEASURE RECOMMENDATIONS

Sustainable and if necessary locally banned logging in sensitive areas (establishment of forest reserves) and sustainable nature-oriented and environmentally-responsible urban planning in herdsmen's huts areas. Banned 4x4 vehicles use in sensitive areas and everywhere outside official roads.

KOVAČ, GRADINA, CRNI VRH

AREA	*21.007 ha*	
SPA CRITERIA	*C1, C6*	
SITE CENTRE LOCATION	*43°19'59.92" N*	*19°27'45.00" E*
LAND COVER, LAND USE, HABITATS	*Pastures*	*31%*
	Complex cultivation patterns	*21%*
	agriculture, natural areas	*17%*
	coniferous forest	*12%*
	mixed forest	*11%*
	broad-leaved forest	*4%*
	natural grassland	*1%*
	transitional woodland/shrub	*1%*
PROTECTION STATUS (HA, %)	/	
ADMINISTRATIVE REGIONS	*Pljevlja*	

GENERAL SITE CHARACTER

Kovač, Gradina and Crni Vrh are a group of middle-altitude mountains and mountain ridges in the northwesternmost part of Montenegro. These mountains lie between Drina River on the border with Bosnia and Herzegovina in the West, Ljubišnja mountain in the South, Pošćenjske Mountains and Ćehotina River in the South and Lim River in the East. The mountains have many local names for separate ridges and peaks, yet there is no general common name [?] capturing the whole mountain group, rising between 1.000 and 1.500 m above sea level. The mountain chain is shared between Bosnia and Herzegovina, Montenegro and Serbia and delineates the borders between the three countries. The landscape of this area is partly forested and partly open, with bathed grassy peaks and slopes, commonly overgrown with Juniper *Juniperus sp*. and broadleaved bushes, and only rarely rocky and broken. The forests are mostly broadleaved, with Balkan Beech *Fagus moesiaca* as the prevailing tree species, in more sun-exposed slopes oaks *Quercus spp*. are common, while in higher areas the forest is mixed or completely coniferous, with Norway Spruce *Picea abies*, Silver Fir *Abies alba* and Scots Pine *Pinus sylvestris* as the most common coniferous tree species. There are almost no permanent settlements in this area, apart from few scattered villages and hamlets.

Common Toad *Bufo bufo*, @B.Rubinić

@M.Šoškić

QUALITY AND ORNITHOLOGICAL IMPORTANCE

In an ornithological sense not much is known about this area. According to the data provided by hunting association of Pljevlja the ridges of Milakovci, Gradina, Dabovine, Dubrave, Ograde, Crni Vrh, Crljenice, Zagrad and Ivovik are important localities for a healthy population of Rock Partridge *Alectoris graeca*. The mixed and coniferous boreal type forests on Kovač Mountain are typical habitat for many boreal species of birds. High densities of Boreal *Aegolius funereus*, Pygmy Owls *Glaucidium passerinum* and Hazel Grouse *Bonasa bonasia* have been recorded there. Kovač Mountain is the first locality in Montenegro where the presence of Ural Owl *Strix uralensis* has been confirmed and at the same time one of only few sites in the country where this species breeds.

CRITERIA SPECIES	CRITERION	THRESHOLD	POPULATION ESTIMATE			
			MIN	MAX	UNIT	SEASON
Alectoris graeca	C1	40 p	120	175	p	R
Strix uralensis	C6	Top 5 sites (2.)	5	10	p	B

THREATS, PRESSURES AND ACTIVITIES WITH IMPACTS ON THE SITE

Main threat of the area is unsustainable logging. Higher areas will gradually become overgrown with forest if the trend of reforestation due to abandonment of pastoralism continues.

CONSERVATION MEASURE RECOMMENDATIONS

Sustainable and if necessary locally banned logging in sensitive areas (establishment of forest reserves). Banned 4x4 vehicles use in sensitive areas and everywhere outside official roads.

KUČI AND CIJEVNA CANYON

AREA	*39.120 ha*	
SPA CRITERIA	*C1, C6*	
SITE CENTRE LOCATION	*42°50'59.87'' N*	*19°46'35.83'' E*
LAND COVER, LAND USE, HABITATS	*broad-leaved forest*	*32%*
	transitional woodland/shrub	*22%*
	sparsely vegetated areas	*18%*
	natural grassland	*9%*
	agriculture, natural areas	*8%*
	bare rock	*4%*
	mixed forest	*2%*
	pastures	*1%*
	coniferous forest	*1%*
	complex cultivation patterns	*1%*
PROTECTION STATUS (HA, %)	*Monument of Nature Cijevna canyon 2.002 ha (5,2%)*	
ADMINISTRATIVE REGIONS	*Podgorica*	

GENERAL SITE CHARACTER

Kuči, sometimes called Kučka krajina, Kučke planine or Žijovo, is an extensive karst mountain plateau, situated in SE Montenegro, very close to the capital of Podgorica. More than two thirds of the mountain plateau is a high mountain massif with 15 peaks over 2.000 m a.s.l. and the highest peak (Surdup) reaching 2.184 m a.s.l. The mountain massif of Kuči is divided from surrounding mountains by deep river canyons. From South and East with Cijevna river, from West by Morača river, from North-West by Mala rijeka canyon and from North by Opasanica river. Most of the area of Kuči is, regardless of the vicinity of Podgorica, quite a remote, pristine and uninhabited area with extensive open spaces. Due to large differences in elevation, the climate varies in different parts of the area – from completely Mediterranean in the bottom of CIjevna river canyon, to subalpine towards the highest peaks of the mountain massif. Although due to the karstic limestone geology there is no surface water, Kuči have a relatively mild climate, influenced by sub-mediterranean climate and rich precipitation. Broad-leaved forests cover about a third of the area's surface, with thermophile species of oaks *Quercus spp*. in submediterranean lower and mid-elevation parts, especially Cijevna and Mala rijeka canyon fringes. Higher areas are mostly overgrown with Balkan Beech *Fagus moesiaca* forests, while in the most unhospitable parts, especially steep rocky slopes and ragged canyon fringes, the remains of more extensive Bosnian Pine *Pinus heldreichii* stands can be found. Only about 30% of the few hundred mountain herder's dwellings (katuni) are still active, with no more than 20 herds of sheep in the whole mountain plateau.

QUALITY AND ORNITHOLOGICAL IMPORTANCE

Kuči mountain plateau is a large preserved area of different habitats, which vary from submediterranean open bushlands, thermophile oak forests, continental beech forests, and Bosnian Pine stands to the high alpine pastures and open rocky grasslands. The bushy open areas at the slopes of the mountain massif and lower parts of the plateau are a hunting area of many raptors, escpecially Short-toed Snake Eagle *Circaetus gallicus*, European Honey Buzzard *Pernis apivorus*, Golden Eagle *Aquila chrysaetos* and Eagle Owls *Bubo bubo*. Large number of Common Nightjars *Caprimulgus europaeus* breed there along with a large healthy population of Wood Larks *Lullula arborea* and Tawny Pipits *Anthus campestris* in more bare and open areas. Rock Partridge is abundant in all rocky open areas, from lower to the highest altitudes, especially when associated with steep slopes and the remaining grazing areas. While oak forest are mostly a habitat of Middle-spotted Woodpeckers *Leiopicus medius*, the extensive areas of preserved Balkan Beech *Fagus moesiaca* forests in higher and more northern areas are densely populated with White-backed *Dendrocopos leucotos* and Black Woodpeckers *Dryocopus martius*. The much more thermophile Cijevna river with steep rocky cliffs holds a healthy population of breeding Eagle Owls *Bubo bubo*, two pairs of Golden Eagles and numerous colonies of Eurasian Crag Martins *Hirundo rupestris*, Red-rumped Swallows *H. daurica*, Western Rock Nuthaches *Sitta neumayer*, Blue Rock Thrushes *Monticola solitarius* and so on. Unfortunately few raptors don't exist in the area any longer. The last breeding of Egyptian Vulture *Neophron percnopterus* was recorded there in 1993, while both Peregrine *Falco peregrinus* and Lanner Falcons *F. biarmicus* most probably got exterminated by pigeon breeders in very recent years in all the three river canyons that surround Kuči plateau: Cijevna, Morača and Mala rijeka.

Female Balkan Green Lizard *Lacerta trilineata*, @B.Rubinić

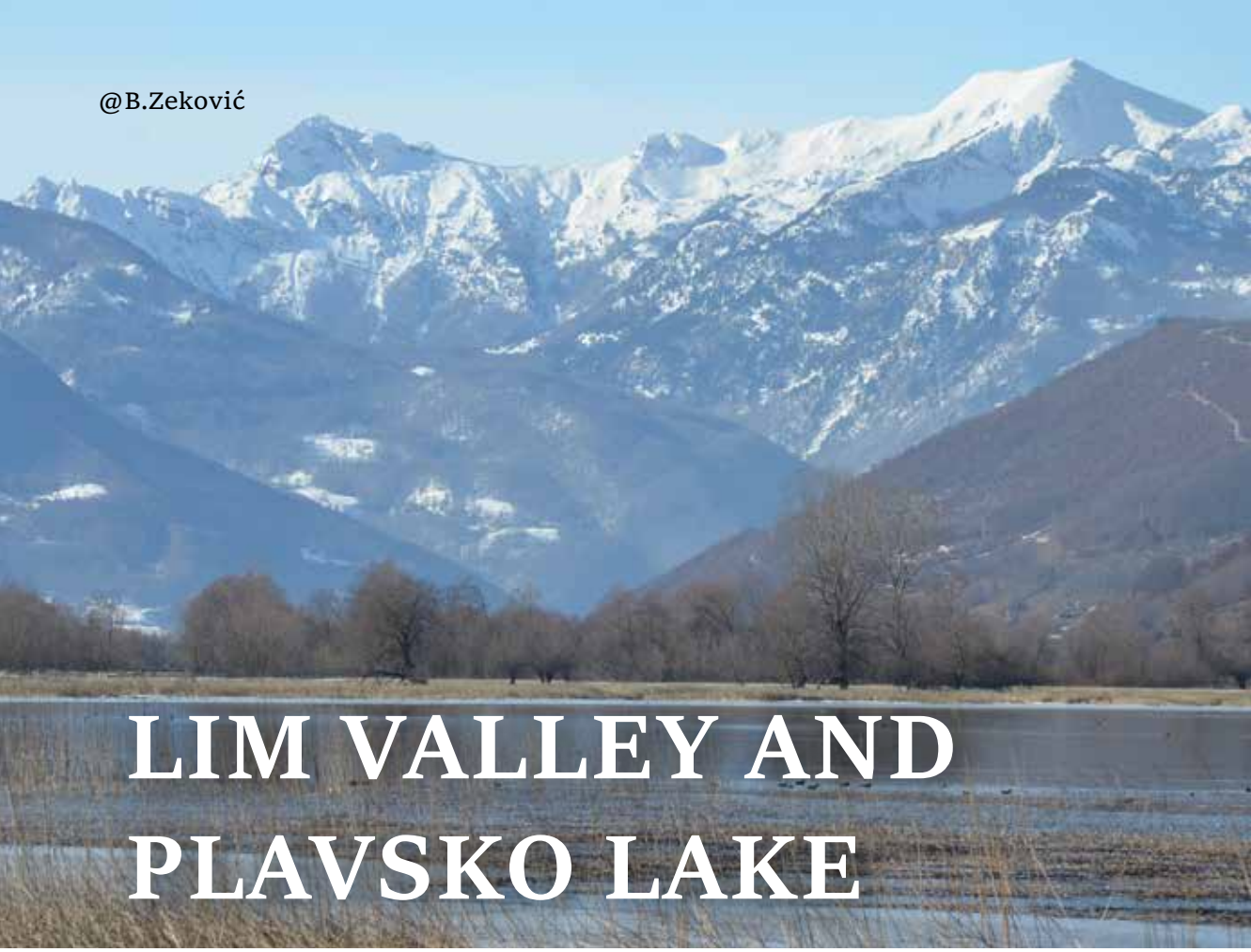
CRITERIA SPECIES	CRITERION	THRESHOLD	POPULATION ESTIMATE			
			MIN	MAX	UNIT	SEASON
Alectoris graeca	C1	40 pairs	400	500	p	B
Streptopeli turtur	C1	20 pairs	100	200	p	B
Bubo bubo	C6	Top 5 sites (4.)	10	20	p	R
Dendrocopos leucotos	C6	Top 5 sites (2.)	150	300	p	R
Lullula arborea	C6	Top 5 sites (2.)	300	600	p	B

THREATS, PRESSURES AND ACTIVITIES WITH IMPACTS ON THE SITE

Main threat of Kuči mountains and Cijevna canyon is unplanned urbanisation of some areas and increased human pressure along most popular sites – i.e. Bukumirsko Lake. Poaching of Rock Partridge, deliberate poisoning of falcons, but also poisoning of carcasses to exterminate wolves and jackals can pose a huge threat for raptors. Such cases in the past were most probably a cause for extinction not only of Egyptian, but also Bearded *Gypaetus barbatus* and Griffon Vultures *Gyps fulvus* that also confirmedly bred in the area in the past. Unsustainable logging of old beech forest can be a problem for woodland species, especially woodpeckers.

CONSERVATION MEASURE RECOMMENDATIONS

Sustainable nature-oriented and environmentally-responsible urban planning, especially in herdsmen's huts areas. Strict control over illegal hunting and poisoning and persecution of violators. Sustainable long-term and nature friendly planning of logging and effective control.



LIM VALLEY AND PLAVSKO LAKE

AREA	*8.912 ha*	
SPA CRITERIA	*C1, C6*	
SITE CENTRE LOCATION	*42°72'09.24'' N*	*19°86'44.40'' E*
LAND COVER, LAND USE, HABITATS	*agriculture, natural areas*	*54%*
	complex cultivation patterns	*13%*
	beaches, dunes, sands	*9%*
	pastures	*8%*
	broad-leaved forest	*5%*
	discontinuous urban fabric	*4%*
	water bodies	*2%*
	transitional woodland/shrub	*2%*
	inland marshes	*1%*
	fruit trees and berry plantations	*1%*
	mixed forest	*1%*
PROTECTION STATUS (HA, %)	/	
ADMINISTRATIVE REGIONS	*Plav, Andrijevica, Berane, Bijelo Polje*	

GENERAL SITE CHARACTER

Lim is the largest and longest river in North-Eastern part of Montenegro and flows from Plav Lake (2 km long and 1 km wide lake, with a surface of 2 km^2) in NE Montenegro in NW direction towards Bijelo Polje and further into Serbia, joining river Drina in Bosnia and Herzegovina after 220 km of river course as its largest tributary. After originating in wide glacial valley of Plavsko Lake on 906 m a.s.l., Lim mostly flows through a narrow, relatively scarcely populated and non-intensively cultivated valley, narrowed into small canyons in those parts with prevailing limestone geology. The valley is widest, most populated and cultivated in surrounding of Gusinje, Plav, Andrijevica, Berane and Bijelo Polje towns, but even there the cultivation is mostly traditional, with prevailing mosaic cultural landscape of small patches of fields, pastures, hay meadows, and orchards, mostly intersected with tree-line hedges and occasionally bushes. Lim river flows through the whole of its current in Montenegro in its natural stream, there are no dams or regulation channels on the river, with only minor consolidations in urban areas. Banks of the Lim river are mostly natural and earthy, low and flat, in places eroded and more rarely conglomerate and steep. The alluvial forest belt is narrow and only preserved in fragments, loose stands and hedge-rows, with prevailing tree species being willows *Salix sp.*, poplars *Populus sp.*, ashes *Fraxinus sp.* and Alders *Alnus glutinosa*. Lim river has numerous tributaries, with the main ones in Montenegro being: Zlorečica, Šekularska, Lješnica, Bjelopoljska and Beranska Bistrica.

QUALITY AND ORNITHOLOGICAL IMPORTANCE

Part of the ornithological importance of the Lim Valley and Plavsko Lake are populations of birds that breed in wetlands around Plavsko Lake and along the river itself, but also birds of the cultural landscape, especially where the valley is widest. The other part are birds that use Plavsko Lake and wet meadows in its vicinity as a stop-over site during their migration from or towards Mediterranean or Africa. The wet meadows in the Southern part of the lake are home to one of the most important populations of Corncrake *Crex crex* in Montenegro, while the eroded banks of Lim river most probably host a significant number of breeding Common Kingfishers *Alcedo atthis*, although the number still needs to be better assessed. Tree hedge-rows in wider parts of the valley, fragments of alluvial forest and other tree stands along the river in combination with mosaic cultural landscape of small plots of fields, pastures and hay meadows present a habitat for important populations of Lesser Grey Shrike *Lanius minor*, European Turtle Dove *Streptopelia turtur* and Grey-headed Woodpecker *Picus canus*. Bushier areas, especially those at the wider parts of the Lim river valley are inhabited with high densities of Barred Warblers *Sylvia nisoria* and Red-backed Shrikes *Lanius collurio*. Common Pochards *Aythya farina*, Northern Lapwings *Vanellus vanellus*, Ruffs *Calidris pugnax* and Meadow Pipits *Anthus pratensis* stop on the Plavsko lake or its banks for feeding and resting mostly during spring and more rare during autumn migration, to name few species of highest conservation importance.

CRITERIA SPECIES	CRITERION	THRESHOLD	POPULATION ESTIMATE			
			MIN	MAX	UNIT	SEASON
Aythya ferina	C1	60 individuals	135		i	M
Streptopeli turtur	C1	20 pairs	23	45	p	B
Crex crex	C6	Top 5 sites (2.)	20	25	p	B
Vanellus vanellus	C1	60 individuals	200		i	M
Alcedo atthis	C6	Top 5 sites (3.)	20	30	p	B
Lanius minor	C6	Top 5 sites (4.)	10	15	p	B
Sylvia nisoria	C6	Top 5 sites (3.)	253	505	p	B
Anthus pratensis	C1	90 individuals	>100		i	M

THREATS, PRESSURES AND ACTIVITIES WITH IMPACTS ON THE SITE

Main threat of Lim Valley and Plavsko Lake is unplanned urbanisation of some areas, especially near larger urban centres. Hydrological changes of Lim river, such as construction of dams, regulations and use for irrigation would affect natural conditions of the river and affect many of the criteria species. Small hydropower plants on Lim tributaries are already changing the hydrology of the river basin and affecting ecosystems along them and the Lim river. Unsustainable use of riverine habitats and changes in traditional agriculture are also a big and real threat. Deliberate poisoning of falcons is widespread, especially in Berane region, and has most probably brought to the local and contributed significantly to the national disappearance of Peregrine Falcons *Falco peregrinus*.

CONSERVATION MEASURE RECOMMENDATIONS

Sustainable nature-oriented and environmentally-responsible urban planning, especially around urban areas. Strict control over illegal hunting and poisoning and persecution of violators. Careful sustainable planning and assessment of every, even smallest hydrological interventions.

LJUBIŠNJA

AREA	*11.541 ha*	
SPA CRITERIA	*C6*	
SITE CENTRE LOCATION	*43°30'69.56'' N*	*19°13'94.57'' E*
LAND COVER, LAND USE, HABITATS	*coniferous forest*	*55%*
	mixed forest	*16%*
	natural grassland	*14%*
	transitional woodland/shrub	*9%*
	agriculture, natural areas	*5%*
	mineral extraction sites	*1%*
PROTECTION STATUS (HA, %)	/	
ADMINISTRATIVE REGIONS	*Pljevlja*	

GENERAL SITE CHARACTER

Ljubišnja is a mountain in NW of Montenegro, on the border with Bosnia and Herzegovina. The slopes of Ljubišnja mountain start from the base of more than 1.000 m a.s.l. and majority of the ridge lies above 1.500 m, with highest peak, Dernečište, reaching 2.238 m a.s.l. Over 70% of Ljubišnja is covered with forest, mostly coniferous forest with prevailing Norway Spruce *Picea abies* and Silver Fir *Abies alba*, with some Macedonian Pines *Pinus peuce* in the highest areas and more broadleaved species towards lower parts, mostly Balkan Beech *Fagus moesiaca* and Sycamore Maple *Acer pseudoplatanus*. In higher regions of Ljubišnja there are some extensive pastures and hay meadows, in many areas overgrown with succession of bushes and trees due to abandonment of grazing.

Ural Owl *Strix uralensis*, @B.Rubinić


@I.Stojović

QUALITY AND ORNITHOLOGICAL IMPORTANCE

Due to its height and prevailing coniferous and mixed forests Ljubišnja is abundant and even homogenous in typical boreal habitat. As a result mostly typical boreal species can be found in the area, like Capercaillie *Tetrao urogallus*, Hazel Grouse *Bonasa bonasia*, Pygmy *Glaucidium passerinum* and Boreal Owls *Aegolius funereus*, and Black *Dryocopus martius*, Grey-headed *Picus canus* and Three-toed Woodpeckers *Picoides tridactylus*. A characteristic species of Ljubišnja's mixed forests is Ural Owl *Strix uralensis*, a species that reaches the SE edge of its distribution in Westernmost Montenegro, Ljubišnja being the most important among few areas where the species is to be found.

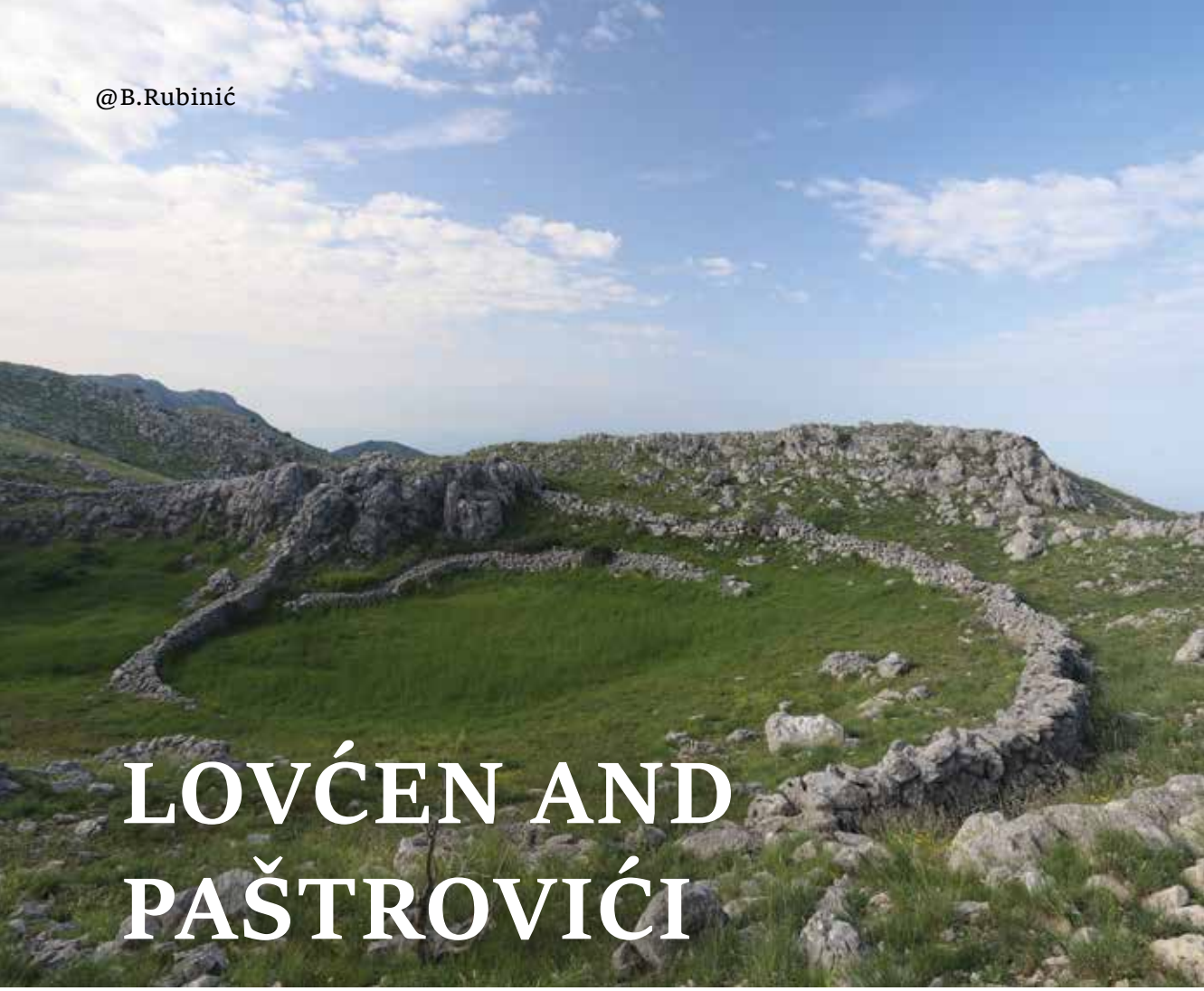
CRITERIA SPECIES	CRITERION	THRESHOLD	POPULATION ESTIMATE			
			MIN	MAX	UNIT	SEASON
Glaucidium passerinum	C6	Top 5 sites (4.)	33	67	p	R
Aegolius funereus	C6	Top 5 sites (4.)	22	44	p	B
Strix uralensis	C6	Top 5 sites (1.)	20		P	B

THREATS, PRESSURES AND ACTIVITIES WITH IMPACTS ON THE SITE

Main threat of the area is unsustainable logging. Higher areas will gradually become overgrown with forest if the trend of reforestation due to abandonment of pastoralism continues.

CONSERVATION MEASURE RECOMMENDATIONS

Sustainable and if necessary locally banned logging in sensitive areas (establishment of forest reserves). Banned 4x4 vehicles use in sensitive areas and everywhere outside official roads.



@B.Rubinić

LOVĆEN AND PAŠTROVIĆI

AREA	*31.190 ha*	
SPA CRITERIA	*C1, C6*	
SITE CENTRE LOCATION	*42°35'09.69'' N*	*18°87'29.53'' E*
LAND COVER, LAND USE, HABITATS	*broad-leaved forest*	*36%*
	transitional woodland/shrub	*34%*
	sparsely vegetated areas	*17%*
	agriculture, natural areas	*4%*
	bare rock	*3%*
	mixed forest	*2%*
	complex cultivation patterns	*1%*
	discontinuous urban fabric	*1%*
	coniferous forest	*1%*
PROTECTION STATUS (HA, %)	*National Park Lovćen 6.620 ha (21,2%)*	
ADMINISTRATIVE REGIONS	*Kotor, Budva, Cetinje, Bar*	

GENERAL SITE CHARACTER

This site encompasses Lovćen and Paštrovići Mountains, a central part of the whole mountain chain that rises above the Montenegrin coast except its westernmost and easternmost parts. In the centre of the area lies Lovćen Mountain, the most famous mountain in Montenegro and an inspiration for the country's name as it used to be covered in dense dark forest in the 13th Century when the country got its modern name. Lovćen mountain rises above the whole Kotor bay and connects with Paštrovići and Sutorman mountains to the East of the coastal town of Budva. The whole mountain chain has a similar appearance, geographical and geological origin and ecological character. This limestone massif rises above the Adriatic Sea in a 60 km long chain of steep mountains that follow the winding Kotor bay (Boka Kotorska) and straighten in the Eastern part towards the town of Bar. Mostly bare rocky Southern slopes are, although over 1.700 m high at its highest point (Štirovnik: 1.749 m a.s.l.), heavily influenced by the Mediterranean climate, while the Northern parts are covered with forest. These are mostly Balkan Beech *Fagus moesiaca* and Black Pine *Pinus nigra* forests in higher altitudes of Lovćen Mountain and Downy *Quercus pubescens*, Macedonian Oak *Q. trojana*, Flowering Ash *Fraxinus ornus* and Oriental Hornbeam *Carpinus orientalis* forests in the lower parts of Paštrovići and Sutorman Mountains. Areas closer to the sea are covered with maquis and garigue and corresponding typical tree and plant species. Central and highest part of Lovćen Mountain was proclaimed as National Park in 1952 due to its cultural, historical and natural values.

QUALITY AND ORNITHOLOGICAL IMPORTANCE

The rocky slopes of this mountain chain are one of the most important areas for Rock Partridge *Alectoris graeca* in the country. Alongside with Rock Partridges there are a number of other birds that prefer rocky and sparsely vegetated areas such as Rufous-tailed *Monticola saxatilis* and Blue Rock Trushes *M. solitarius*, Tawny Pipits *Anthus campestris*, Ortolan *Emberiza hortulana* and Rock Buntings *E. cia*, Western Rock Nuthatch *Sitta neumayer*, Black-eared *Oenanthe hispanica* and Northern Wheatears *O. oenanthe* and others. A large population of Eurasian Eagle Owls *Bubo bubo* and Golden Eagles *Aquila chrysaetos* nest and feed on slopes and plateaus of the ridge as does a number of Short-toed Snake Eagles *Circaetus gallicus* and European Honey Buzzards *Pernis apivorus*. Lower areas, maquis and garigue, but also orchards and olive-tree stands are inhabited by Syrian *Dendrocopos syriacus* and Green Woodpeckers *Picus viridis*, oak forests on middle-heights with Middle-spotted Woodpeckers Leiopicus medius, while highest areas with beech forest host a small population of Grey-headed *Picus canus* and White-backed Woodpeckers *Dendrocopos leucotos*. Levant Sparrowhawks *Accipiter brevipes* live in lowest parts of orchards and mosaic garden and forested landscapes, while in maquis different Mediterranean warblers are prevailing, namely Sardinian *Sylvia melanocephala*, Subalpine *S. cantillans*, Eastern Orphean *S. crassirostris*, Olivaceous *Iduna pallida* and rarely and individually Olive-tree Warblers *Hippolais olivetorum*.

CRITERIA SPECIES	CRITERION	THRESHOLD	POPULATION ESTIMATE			
			MIN	MAX	UNIT	SEASON
Alectoris graeca	C1	40 pairs	300	400	p	R
Streptopelia turtur	C1	20 pairs	39	78	p	B
Bubo bubo	C6	Top 5 sites (1.)	20	25	p	R
Aquila chrysaetos	C6	Top 5 sites (4.)	3	6	p	R
Accipiter brevipes	C6	Top 5 sites (5.)	10	15	p	B
Dendrocopos syriacus	C6	Top 5 sites (4.)	20	50	p	R
Emberiza hortulana	C6	Top 5 sites (3.)	20	30	p	B

Horned Viper *Vipera ammodytes*, @B.Rubinić

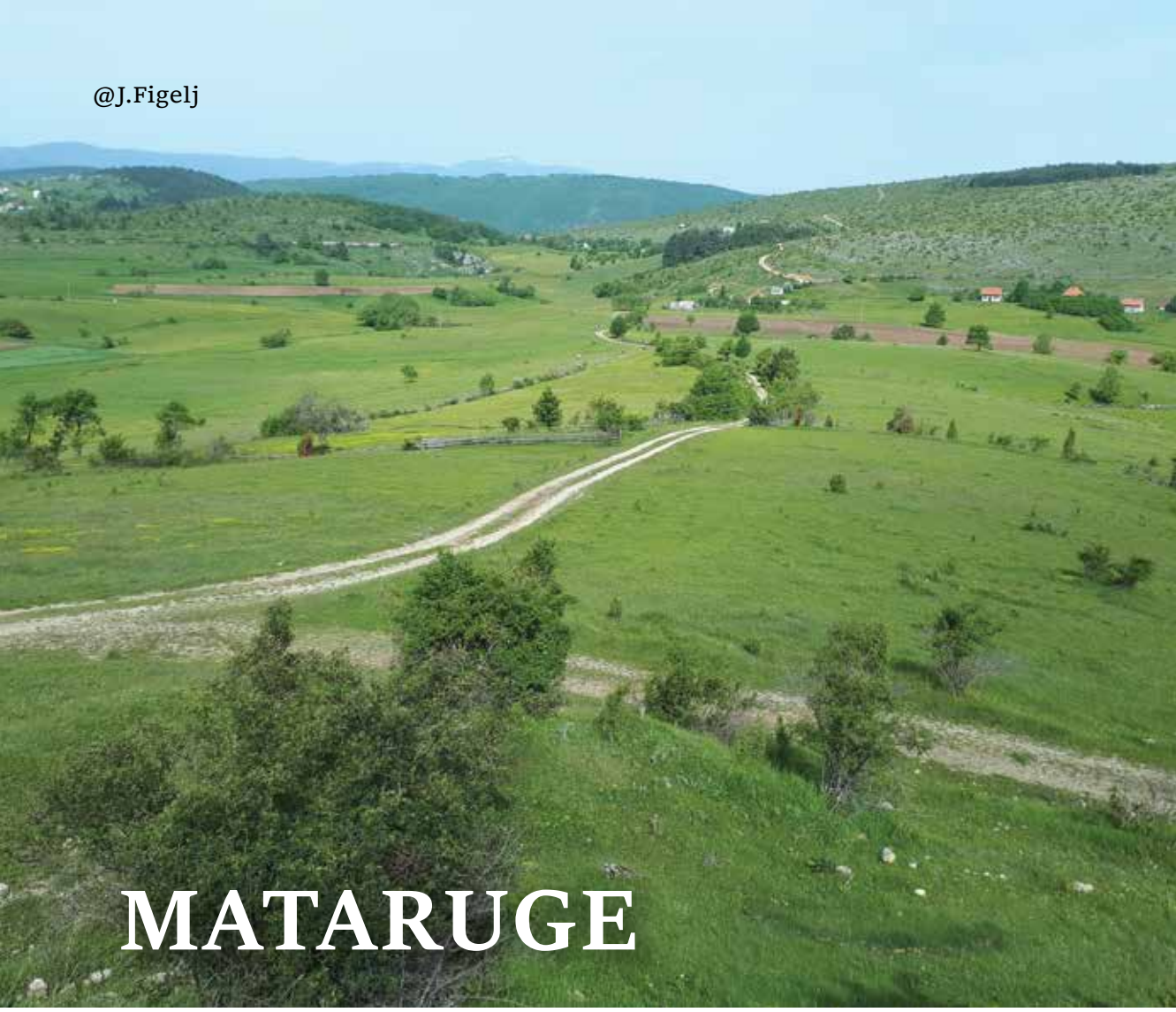
THREATS, PRESSURES AND ACTIVITIES WITH IMPACTS ON THE SITE

Many areas of this SPA are either very popular touristic destinations or very close to those. Unplanned or poorly assessed urbanisation of some areas and increased human pressure along most popular sites – i.e. Njeguši village, Lovćen National Park, vicinity of Kotor and Budva towns. Infrastructure development, i.e. new roads, resorts and similar projects, are and could be impacting wildlife in the future, if not planned well. Illegal hunting takes place in some areas, especially of Rock Partridge and Common Quails. Unsustainable logging of old beech forest can be a problem for woodland species, especially woodpeckers.

CONSERVATION MEASURE RECOMMENDATIONS

Sustainable nature-oriented and environmentally-responsible urban planning, especially in and around most popular touristic areas and traditional old urban villages and settlements. Strict control over illegal hunting and poisoning and persecution of violators. Sustainable long-term and nature friendly planning of logging and effective control.

@J.Figelj



MATARUGE

AREA	7.953 ha	
SPA CRITERIA	C6	
SITE CENTRE LOCATION	43°24'02.12'' N	19°46'29.59'' E
LAND COVER, LAND USE, HABITATS	agriculture, natural areas	35%
	transitional woodland/shrub	18%
	natural grassland	15%
	broad-leaved forest	14%
	coniferous forest	12%
	mixed forest	3%
	sparsely vegetated areas	2%
	water bodies	1%
PROTECTION STATUS (HA, %)	/	
ADMINISTRATIVE REGIONS	Pljevlja	

GENERAL SITE CHARACTER

Mataruge is a village and wider area of loose settlements in the upper course of the river Ćehotina. It is located in the North of the country, close to the border with Serbia, some 10 km East of the town of Pljevlja. The most unique biogeographical feature of this area is a fairly large complex of some 120 ha of mesophilic hay meadows, in places intersected with small springs and streams, forming small patches of wet meadows on the right bank of Ćehotina river.

QUALITY AND ORNITHOLOGICAL IMPORTANCE

This SPA, although small holds the largest population of Corncrakes *Crex crex* in Montenegro, due to the general scarcity of such type of habitats in the country. The surrounding of a moist depression in Mataruge is a typical mosaic cultural landscape with different grasslands: hay meadows, pastures and more bare areas with scarce, but natural vegetation. These grasslands are combined with small patches of crop and fallow fields and mostly bushy hedges, patches of bushes and tree stands. This type of habitat is characteristic for Wood Larks *Lullula arborea*, Barred Warblers *Sylvia nisoria* in lusher areas and Tawny Pipits *Anthus campestris* in dryer and more open parts.

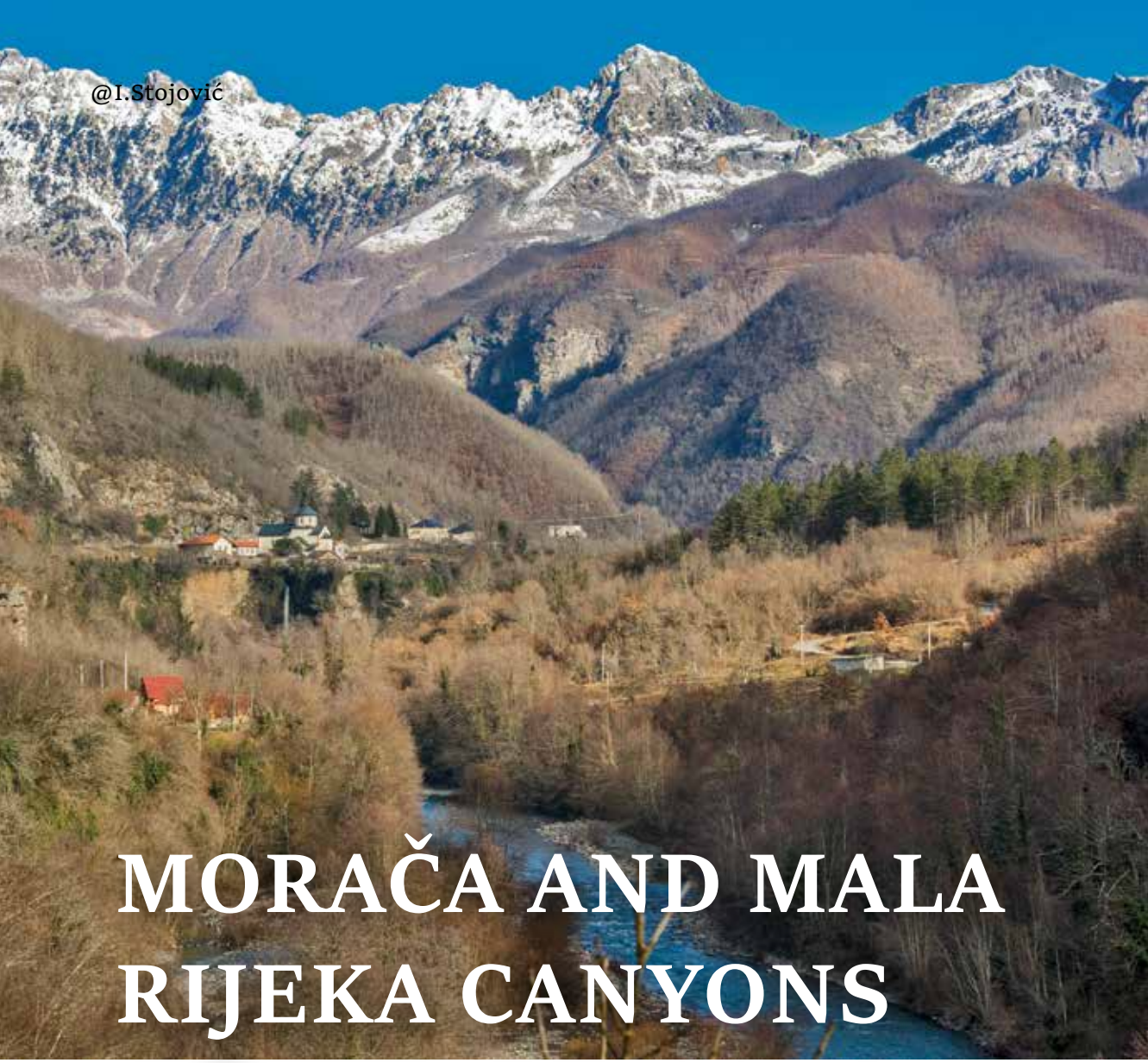
CRITERIA SPECIES	CRITERION	THRESHOLD	POPULATION ESTIMATE			
			MIN	MAX	UNIT	SEASON
Crex crex	C6	Top 5 sites (1.)	20	25	p	R

THREATS, PRESSURES AND ACTIVITIES WITH IMPACTS ON THE SITE

Threats in this area are similar as in other lowlands of Montenegro, especially those along the rivers: unplanned urbanisation of some areas, potential hydrological changes that would affect natural conditions of the river and surrounding mesophilic habitats and bird species linked to those. The site is especially threatened due to a small size and the fact that such habitats are very rare in Montenegro. Even a small unfortunate event or intervention can cause a lot of damage. Unsustainable use of traditional landscapes and changes in traditional agriculture are also a real threat.

CONSERVATION MEASURE RECOMMENDATIONS

Sustainable nature-oriented and environmentally-responsible urban and other planning. Careful sustainable planning and assessment of every, even smallest hydrological and infrastructural interventions in core areas – i.e. on mesophilic and wet meadows in the Mataruge village area.



MORAČA AND MALA RIJEKA CANYONS

AREA	27.663 ha	
SPA CRITERIA	C1, C6	
SITE CENTRE LOCATION	42°81'34.30'' N	19°19'24.00'' E
LAND COVER, LAND USE, HABITATS	broad-leaved forest	56%
	transitional woodland/shrub	21%
	agriculture, natural areas	12%
	mixed forest	6%
	sparsely vegetated areas	4%
	bare rock	1%
PROTECTION STATUS (HA, %)	/	
ADMINISTRATIVE REGIONS	Podgorica, Kolašin	

GENERAL SITE CHARACTER

Although not big in an absolute sense, Morača is one of the largest and most prominent rivers in Montenegro. Its source is at the height of 975 m in the Moračke Mountains, under the highest peak of this mountain range, Lola. Morača is mainly a mountainous river, that flows over the Southern half of the country until it reaches Skadar Lake as its most important water source after 99,5 km of completely natural and unspoiled course. The upper course of the river separates Moračke from Sinjajevina mountains in a canyon that becomes as much as 1.000 m deep in its central part (Platije canyon). All the three main tributaries of Morača river apart from the largest one, Zeta: Mrtvica, Mala rijeka (Little river) and Cijevna, flow through deep and steep canyons, plastered in limestone rocks. Mala Rijeka canyon is a deep canyon with a very small river that dries out during summer time at its bottom, and joins Morača river a few kilometers North to Podgorica. The river originates in Kuči Mountains, near the village of Brskut. The slopes of the Northern part of Morača canyon are a little less steep and are well covered with Balkan Beech *Fagus moesiaca* and oak *Quercus sp*. forests, most of which are hardly accessible and left in relatively preserved state. Highest areas and canyon fringes are overgrown with loose stands of Black *Pinus nigra* and Bosnian Pine *P. heldreichii*, while the steepest and highest areas are mostly shrubby and rocky, with pastures and sparsely vegetated grasslands on small plateaus. The bottom of the canyon is sparsely populated with patchy agriculture of little fields, vineyards, orchards and pastures. The climate in the canyon is a mixture of Mediterranean climate at the bottom and in Southern parts of the canyon and sub-alpine towards higher and more Northern parts.

QUALITY AND ORNITHOLOGICAL IMPORTANCE

The most obvious landscape characteristic of this area are deep canyons of Morača, Mala and Mrtvica rivers that are extremely rich with cliffs and rocky outcrops, and as such very convenient for the species of steep rocky areas. 5 to 7 pairs of Golden Eagles *Aquila chrysaetos* make this area the best location in the country for the species, and while they nest in the canyon's cliffs, the eagles hunt on vast open and semi-open plains of Moračke and Kuči Mountains above the canyons. Oher raptors and falcons have been unfortunately mostly exterminated from the area. While the Egyptian *Neophron percnopterus* and Griffon Vultures *Gyps fulvus* that bred there at least by the mid 20th Century were probably colateral victims of wolf poisonings, the poisoning of Falcons, namely Peregrine *Falco peregrinus* and Lanner Falcons *F. biarmicus* is much more deliberate and systematic and takes place in very recent times. The area holds a relatively large population of Rock Partridges *Alectoris graeca* in rocky areas, and probably a healthy population of Turtle Doves *Streptopelia turtur* in lower areas, in the cultivated part of the valley at the bottom of the canyons. The area is due to extensive areas of hardly accessible and as a result well preserved broad-leafed forests also a stronghold of White-backed Woodpecker *Dendrocopos leucotos*, a species that is in Montenegro specialized almost exclusively to old Balkan Beech forests. The species is accompanied with more generalistic Black Woodpeckers *Dryocopus martius*, in Montenegro rare Grey-headed Woodpeckers *Picus canus* and with Middle-spotted Woodpeckers *Leiopicus medius* that are more abundant in lower, more thermophile oak forests. Syrian Woodpeckers, another Annex I woodpecker species, inhabit lowest, warmest areas with peach, plum and apricot orchards.

CRITERIA SPECIES	CRITERION	THRESHOLD	POPULATION ESTIMATE			
			MIN	MAX	UNIT	SEASON
Alectoris graeca	C1	40 pairs	190	230	p	R
Streptopelia turtur	C1	20 pairs	87	174	p	B
Aquila chrysaetos	C6	Top 5 sites (1.)	5	7	p	R
Dendrocopos leucotos	C6	Top 5 sites (1.)	247	494	p	R

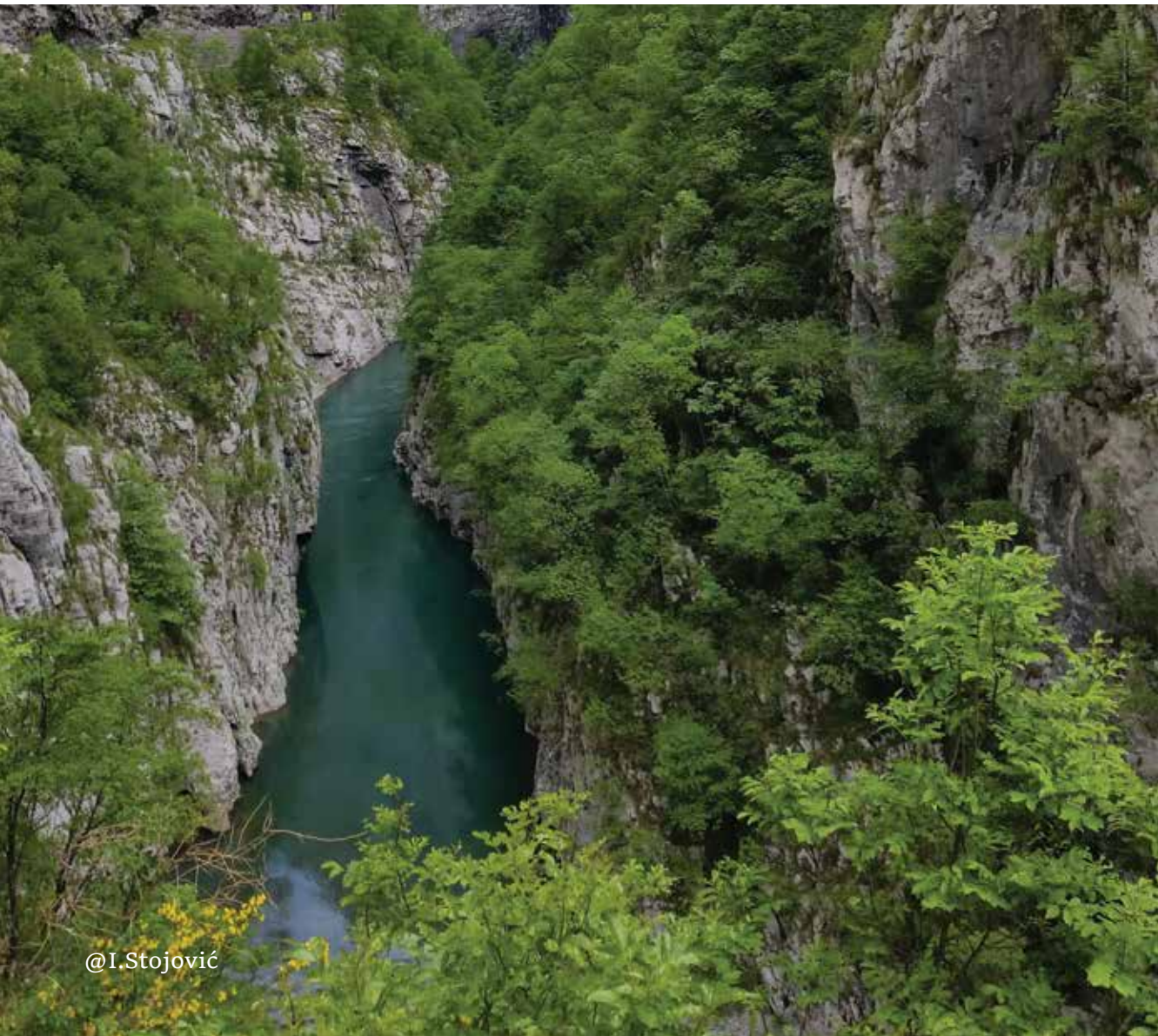
THREATS, PRESSURES AND ACTIVITIES WITH IMPACTS ON THE SITE

The main threat of this area are continuous ideas of hydropower construction that would not only harm the natural course of rivers and streams of this area, but also inevitably expose previously inaccessible forest patches to erosion and logging. Negative effects of the development of the only highway in Montenegro and the associated infrastructure are already visible not only in aesthetic sense, but also by local disappearance of some key species, i.e. the Eurasian Thick-knee *Burhinus oedicnemus* near Smokovac construction site.

Land abandonment is an issue especially in higher areas, where pastures are being continuously overgrown with succession of scrubs and trees, making it less attractive for Rock Partridges and other species of rocky landscapes. Cutting of large mature trees and opening of new logging areas should be carefully controlled.

CONSERVATION MEASURE RECOMMENDATIONS

Hydropower development should be banned or a subject of extremely cautious assessment and geographical location. Infrastructure development plans should be done in more transparent and integral way. Encouraging of alternative sustainable livelihoods that would help maintaining traditional mosaic cultural landscape. Cutting of large mature trees and opening of new logging areas should be carefully controlled.



MORAČKE MOUNTAINS AND MAGANIK

AREA	*41.008 ha*	
SPA CRITERIA	*C1, C6*	
SITE CENTRE LOCATION	*42°81'34.30'' N*	*19°19'24.00'' E*
LAND COVER, LAND USE, HABITATS	*sparsely vegetated areas*	*22%*
	natural grassland	*16%*
	broad-leaved forest	*15%*
	transitional woodland/shrub	*13%*
	pastures	*13%*
	mixed forest	*10%*
	bare rock	*4%*
	coniferous forest	*3%*
	agriculture, natural areas	*3%*
PROTECTION STATUS (HA, %)	/	
ADMINISTRATIVE REGIONS	*Podgorica, Kolašin*	

GENERAL SITE CHARACTER

Moračke Mountains are a large mountain massif in the central part of Montenegro. They are divided from surrounding mountains with a deep Morača canyon from Northern and Eastern side, while at the West the mountains gradually descend onto mountain plateaus of Lukovica and Krnovo that end with another mountain massif of Vojnik. Central, highest part of the Moračke Mountains is called Maganik and sometimes regarded as a special mountain chain. The highest peak of Moračke Mountains is Kapa Moračka that rises 2.226 m high. The prevailing landscape of these high mountain massif are vast open grasslands. They are mostly used as pastures or, more rarely as hay meadows, but in a very extensive way. As a result of non-intensive, traditional land use these plains are very rich in plant diversity. Especially in highest areas the rocky outcrops and bare ground or sparsely vegetated areas prevail over grasslands and towards the edges and cliffs the area is overgrown with bushy vegetation and mostly broad-leaved Balkan Beech Fagus moesiaca forests, locally mixed with Norway Spruce *Picea abies* and Silver Fir *Abies alba*. There are some Bosnian *Pinus heldreichii* and Black Pines *P. nigra* in steeper rockier areas as well.

Yellowhammer *Emberiza citrinella*, @B.Rubinić

QUALITY AND ORNITHOLOGICAL IMPORTANCE

Moračke Mountains are a vast open area of grasslands, and rocky fringes are abundant on peaks and mountain edges, that in many cases fall into steep canyons. Such habitat is characteristic for birds of rocky open areas: Rock partridges *Alectoris graeca* are abundant locally, and the population of Tawny Pipits *Anthus campestris* is among most important ones in the country. Rufous-tailed Rock Trushes *Monticola saxatilis* and Northern Wheatears *Oenanthe oenanthe* are among most characteristic birds of rocky areas, while lusher grassy areas get dominated by dominant Eurasian Skylarks *Alauda arvensis* and a little less numerous Whinchats *Saxicola rubetra*. In the most humid grasslands scattered groups or individual Corncrakes *Crex crex* breed. Vast open areas are a hunting area of some 5 to 10 pairs of Golden Eagles that nest in Bukovica, Mrtvica and Morača canyons which are encroaching the main mountain plateau. Although mainly barren, lower areas and steep canyon slopes at the foot of this mountain massif are overgrown with old beech forests, where a significant population of White-backed *Dendrocopos leucotos*, Black *Dryocopus martius*, Grey-headed *Picus canus* and Middle-spotted Woodpeckers *Leiopicus medius* can be found.

CRITERIA SPECIES	CRITERION	THRESHOLD	POPULATION ESTIMATE			
			MIN	MAX	UNIT	SEASON
Alectoris graeca	C1	40 pairs	240	360	p	R
Crex crex	C6	Top 5 sites (3.)	10	15	p	B
Dendrocopos leucotos	C6	Top 5 sites (5.)	122	245	p	R
Anthus campestris	C6	Top 5 sites (2.)	104	209	p	B

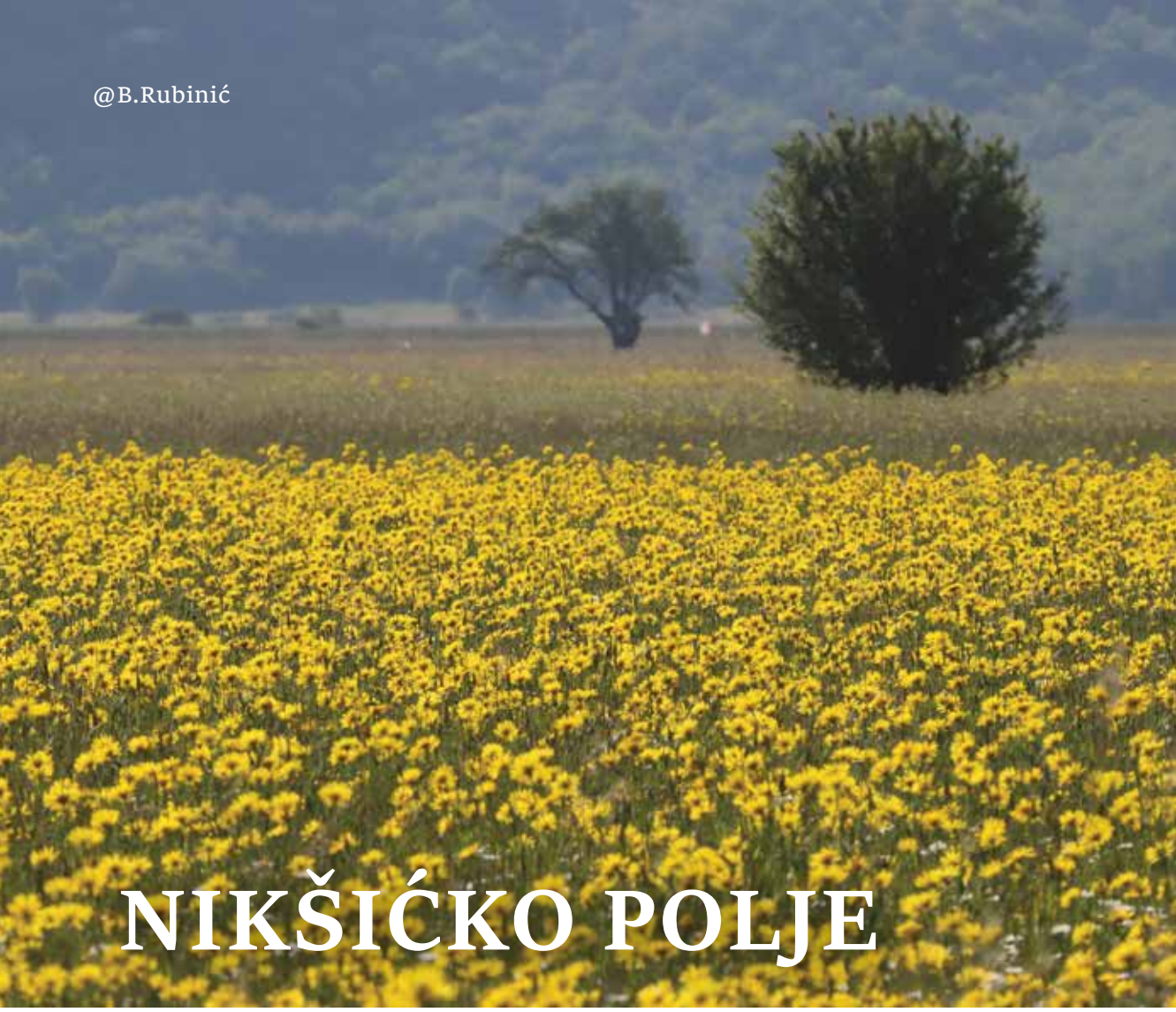
THREATS, PRESSURES AND ACTIVITIES WITH IMPACTS ON THE SITE

Main threat of Moračke Mountains is unplanned urbanisation of some areas and increased human pressure along most popular sites – i.e. Kapetanovo Lake. Infrastructure development, i.e. construction of wind farm in Krnovo Mountain, a part of Moračke Mountains, could be impacting wildlife, but the impacts are not well studied. Unsustainable logging of old beech forest can be a problem for woodland species, especially woodpeckers.

CONSERVATION MEASURE RECOMMENDATIONS

Sustainable nature-oriented and environmentally-responsible urban planning, especially in herdsmen's huts areas. Strict control over illegal hunting and poisoning and persecution of violators. Sustainable long-term and nature friendly planning of logging and effective control.

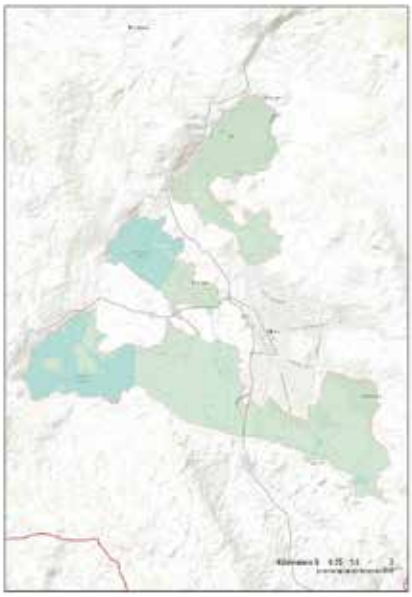
@I.Stojović



NIKŠIĆKO POLJE

AREA	*6.041 ha*	
SPA CRITERIA	*C1, C6*	
SITE CENTRE LOCATION	*42°77'38.37'' N*	*18°91'98.45'' E*
LAND COVER, LAND USE, HABITATS	*complex cultivation patterns*	*33%*
	pastures	*32%*
	water bodies	*20%*
	transitional woodland/shrub	*5%*
	agriculture, natural areas	*3%*
	discontinuous urban fabric	*3%*
	mineral extraction sites	*2%*
	broad-leaved forest	*1%*
PROTECTION STATUS (HA, %)	/	
ADMINISTRATIVE REGIONS	*Nikšić*	

GENERAL SITE CHARACTER



Nikšićko polje is the largest karst polje in Montenegro. It has a surface of about 60 km² and lies in the West of Montenegro. The geographic and cultural-historic center of the polje is the town of Nikšić, the second largest town in Montenegro and the place the polje got its name from. Triangular in shape and lying at 640 m a.s.l. Nikšićko polje is the water-richest polje in the whole Dinaric area, with the main river Zeta and tributaries of Moštanica and Gračanica bringing most water and occasionally flooding the polje. Apart from these rivers and streams some 300 sources, 32 estavelles and around 900 sink holes can be found on Nikšićko polje. Large floods of Nikšićko polje were regulated in the past by the construction of dams and channels, built during the construction of hydro-power plant on Zeta river, and are nowadays much less extensive. As a result of the hydrological works three prominent and large water-bodies can be found in Nikšićko polje: the accumulation lakes Krupac, Slano and Vrtac. Nikšićko polje is a fertile lowland, yet the agriculture has retained a lot of its traditional farming practices and a typical mosaic landscape image. Extensive grasslands, mostly hay grassland and some pastures are characteristic for about third of the area. Orchards, solitary large trees, and tree and bushy hedge-rows are important landscape features that resulted in the presence of some typical bird species of the cultural landscapes.

Yellow Wagtail *Motacilla flava*, @M.Jovićević

QUALITY AND ORNITHOLOGICAL IMPORTANCE

Nikšićko polje has different landscape and habitat features that provide shelter and feeding ground for many bird species all year round: during migration, wintering and breeding time. Most important breeding areas are extensive mosaic cultural landscapes of grasslands, bushy hedgerows and tree-stands that cover about three-quarters of the surface of the polje. The most important species of this landscape are Lesser-Grey Shrike *Lanius minor* and Barred Warbler *Sylvia nisoria*. Apart from those two Annex I species an incredibly high number of Red-backed Shrikes *Lanius collurio*, Nightingales *Luscinia megarhynchos* and Hoopoes *Upupa epops* inhabit this habitat. During the migration extensive grasslands and banks of Slano and Vrtac lakes become an important resting and feeding area for Common Cranes *Grus grus*, Northern Lapwings *Vanellus vanellus*, Ruffs *Calidris pugnax*, Wood Sandpipers *Tringa glareola* and many other shorebirds. Wintering flocks of Common Pochards *Aythya farina* and Coots *Fulica atra* are the largest in the country after those on considerably larger Skadar Lake.

CRITERIA SPECIES	CRITERION	THRESHOLD	POPULATION ESTIMATE			
			MIN	MAX	UNIT	SEASON
Aythya ferina	C1	60 individuals	5	9	i	W
Grus grus	C6	15 individuals	500		i	M
Mycrocarbo pygmeus	C6	Top 5 sites (5.)	20	155	i	W
Vanellus vanellus	C1	60 individuals	1	1.35	i	M
Calidris pugnax	C1	60 individuals	500	590	i	M
Lanius minor	C6	Top 5 sites (1.)	30	50	p	B
Sylvia nisoria	C6	Top 5 sites (2.)	274	548	p	B
Anthus pratensis	C1	90 individuals	100		i	M

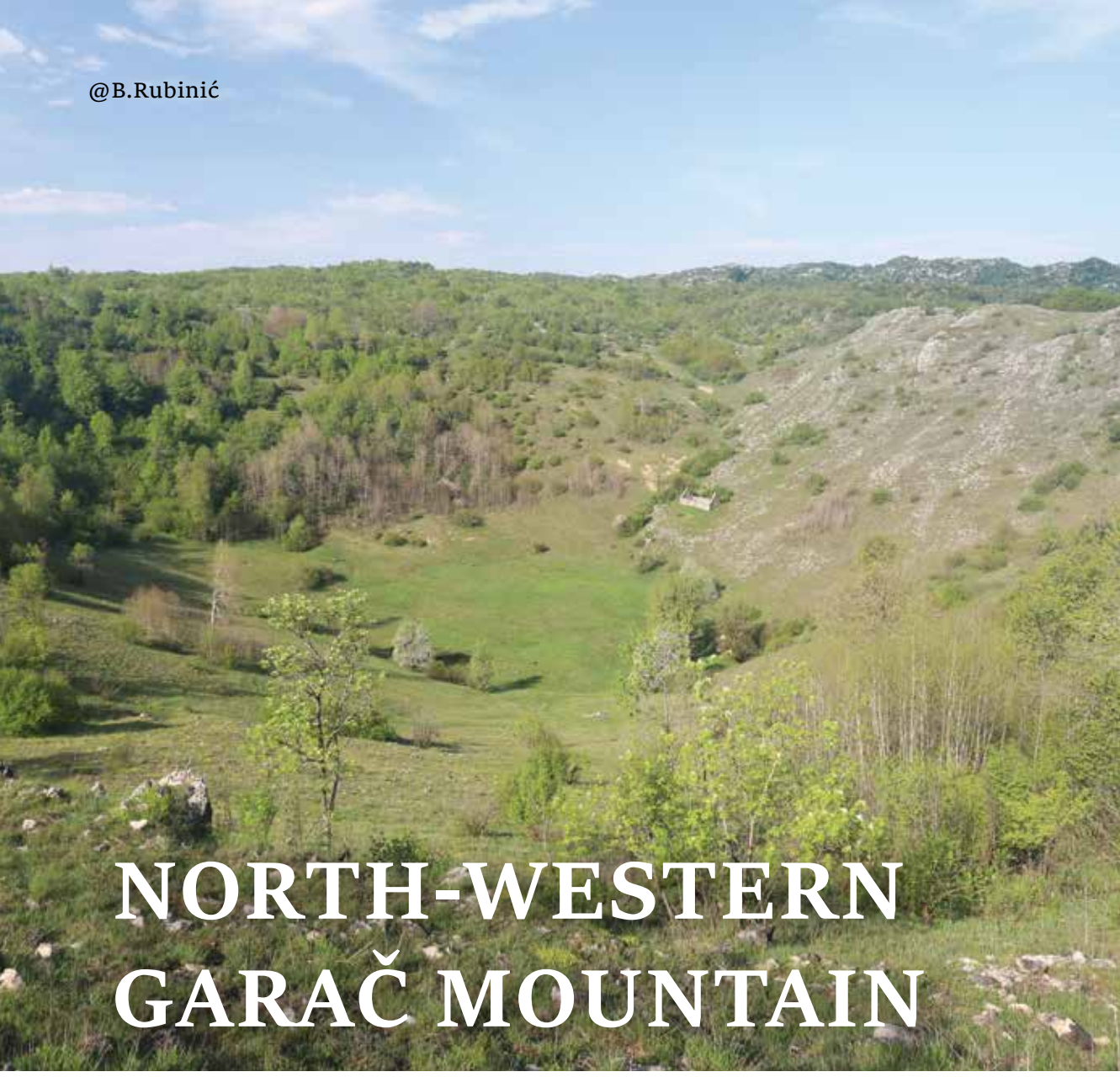
THREATS, PRESSURES AND ACTIVITIES WITH IMPACTS ON THE SITE

Due to the vicinity of the Montenegro's second largest city, Nikšić, main threats are continuous urbanization and infrastructure development along main roads and urban centres, illegal construction and use of pesticides in agriculture, communal and industrial pollution and waste disposal. Autumn poaching of quails is a widespread practice and cases of illegal killings and poisoning of raptors are regular.

CONSERVATION MEASURE RECOMMENDATIONS

Urban planning, solid and liquid waste management, more efficient hunting law enforcement and sustainable and more controlled use of pesticides.

@B.Zeković



NORTH-WESTERN GARAČ MOUNTAIN

AREA	*1.960 ha*	
SPA CRITERIA	*C6*	
SITE CENTRE LOCATION	*42°58'77.66'' N*	*18°94'70.99'' E*
LAND COVER, LAND USE, HABITATS	*transitional woodland/shrub*	*38%*
	natural grassland	*37%*
	broad-leaved forest	*15%*
	sparsely vegetated areas	*10%*
	burnt areas	*1%*
PROTECTION STATUS (HA, %)	/	
ADMINISTRATIVE REGIONS	*Cetinje*	

GENERAL SITE CHARACTER

Garač is a mountain in central Montenegro that rises steeply from Bjelopavlići valley and although it is not high compared to other mountains and ridges in the country, the fact that the difference in elevation between lowest and highest point is almost 1.400 m makes it look majestic and high, sometimes called also "Kilimanjaro of Montenegro". The ridge of Garač mountain extends in NW-SE direction, reaching 1.436 m at its highest point, but with a main hilly plateau stretching up to 5 km in width on an altitude between 900 and 1.000 m a.s.l. The North-Western part of the Garač Mountain that qualifies as SPA covers the widest part of the plateau. Main landscape characteristic of this area are sub-mediterranean mosaic cultural landscapes in a hilly karstic environment. Characteristic stone walls are combined with bush and three stands, small forests and hedge-rows, small patches of fields, especially in the bottom of numerous dolinas and extensive rocky grasslands with scarce grass. Main tree species are different oaks, i.e. Downy Oak *Quercus pubescens*, Turkey Oak *Q. cerris*, Macedonian Oak *Q. trojana* etc., Flowering Ash *Fraxinus ornus*, Oriental Hornbeam *Carpinus orientalis* etc.

Balkan Iris *Iris reichenbachii*, @B.Rubinić

QUALITY AND ORNITHOLOGICAL IMPORTANCE

The area of NW Garač is one of the most important areas (second most important area after Bratogošt SPA) for the Ortolan Bunting *Emberiza hortulana* in Montenegro. Between 20 and 40 pairs breed sub-colonially on a rather small area of few square kilometres, dominated by scarce rocky grasslands intertwined with small patches of arable and fellow fields, solitary trees and tree-hedges. In the same area large numbers of Woodlarks *Lullula arborea*, Hoopoes *Upupa epops*, Red-backed Shrikes *Lanius collurio*, European Nightjars *Caprimulgus europaeus*, Nightingales and other typical sub-mediterranean birds of cultural landscapes can be found. In broadleaved forests Middle-spotted Leiopicus medius, Green *Picus viridis* and Black Woodpeckers *Dryocopus martius* are common and the area is a hunting ground of Short-toed Snake Eagles *Circaetus gallicus* and Eagle Owls *Bubo bubo*.

CRITERIA SPECIES	CRITERION	THRESHOLD	POPULATION ESTIMATE			
			MIN	MAX	UNIT	SEASON
Emberiza hortulana	C6	Top 5 sites (2.)	20	40	p	B

THREATS, PRESSURES AND ACTIVITIES WITH IMPACTS ON THE SITE

Main threats of this area are land abandonment and re-forestation. Once extensively managed fields, hay meadows and pastures are getting overgrown with the succession of bushes and eventually transform into woodland.

CONSERVATION MEASURE RECOMMENDATIONS

The long-term existence of Ortolan Bunting and other species of open rocky grasslands with tree and arable land structures are dependent on traditional agriculture techniques and sustainable management of mosaic landscapes.

Ortolan Bunting *Emberiza hortulana*, @B.Rubinić

ORJEN MOUNTAIN

AREA	*32.502 ha*	
SPA CRITERIA	*C1, C6*	
SITE CENTRE LOCATION	*42°57'74.94'' N*	*18°58'74.92'' E*
LAND COVER, LAND USE, HABITATS	*broad-leaved forest*	*35%*
	transitional woodland/shrub	*33%*
	sparsely vegetated areas	*12%*
	agriculture, natural areas	*5%*
	bare rock	*4%*
	natural grassland	*4%*
	mixed forest	*3%*
	complex cultivation patterns	*2%*
	pastures	*1%*
	coniferous forest	*1%*
PROTECTION STATUS (HA, %)	*Orjen Nature Park 8.797 ha (27%)*	
ADMINISTRATIVE REGIONS	*Kotor, Herceg Novi, Nikšić, Cetinje*	

GENERAL SITE CHARACTER

Orjen is the Westernmost coastal mountain of Montenegro. Although one of the areas with highest precipitation in Europe with an average of 4.762 mm/year (in some years even exceeding 7.000 mm) it is also one of the driest areas in the country. The reason for that lies in extreme karstic environment of this limestone area, that is highly abundant with karstic phenomena, like crevices, sinks and holes where rain water disappears to the underground, making this area also one of the most hostile and little populated areas in Montenegro. About half of the surface area of the mountain massif is covered with Dinaric Balkan Beech *Fagus moesiaca* forests, some of which are ecologically in a very good old-growth state. The other half are either areas with bare rocky ground, sparse grasslands or thick garigue- and maquis-style transitional bushy vegetation. Higher areas are covered with remains of once extensive stands of Bosnian Pine *Pinus heldreichii* that were extensively logged in Austro-Hungarian times of the 19th Century, while the more temperate and lower areas are covered with oak *Quercus spp*. and Black Pine *Pinus nigra* forests. Two karst poljes are located at the foot of the mountain massif – cultivated mesophile and relatively water rich Grahovsko polje, and a very dry Crkvičko or Dragaljsko polje where the lack of water allows only modest grazing. The highest peak of Orjen mountain is 1.894 high Zubački Kabao, while 49 peaks reach over 1.500 m a.s.l.

@M.Jovićević

QUALITY AND ORNITHOLOGICAL IMPORTANCE

Birds of Orjen Mountain are linked to a couple of different general ecosystem types that prevail in this area. While bare rocky areas are inhabited by typical rocky environment species, beech forests have different bird communities, sub-Mediterranean areas again different, as have cultural landscapes in the karst poljes, low-lying valleys and slopes at the base of the massif. Typical rocky areas birds are Rock Partridge *Alectoris graeca*, Rufous-tailed *Monticola saxatilis* and Blue Rock Trushes *M. solitarius*, Short-toed Snake Eagles *Circaetus gallicus* and Alpine Choughs *Pyrrhocorax graculus*. There is an important population of White-backed *Dendrocopos leucotos* and Black Woodpeckers *Dryocopus martius* living in old-growth beech forests, while European Turtle-doves Streptopelia turtur, Lesser Grey Shrikes *Lanius minor* and Barred Warblers *Sylvia nisoria* are confined to warmer lower areas of Grahovsko polje, Nudo, Kruševice villages and similar areas.

CRITERIA SPECIES	CRITERION	THRESHOLD	POPULATION ESTIMATE			
			MIN	MAX	UNIT	SEASON
Alectoris graeca	C1	40 pairs	50	150	p	R
Streptopelia turtur	C1	20 pairs	46	92	p	B
Aquila chrysaetos	C6	Top 5 sites (5.)	3	4	p	R

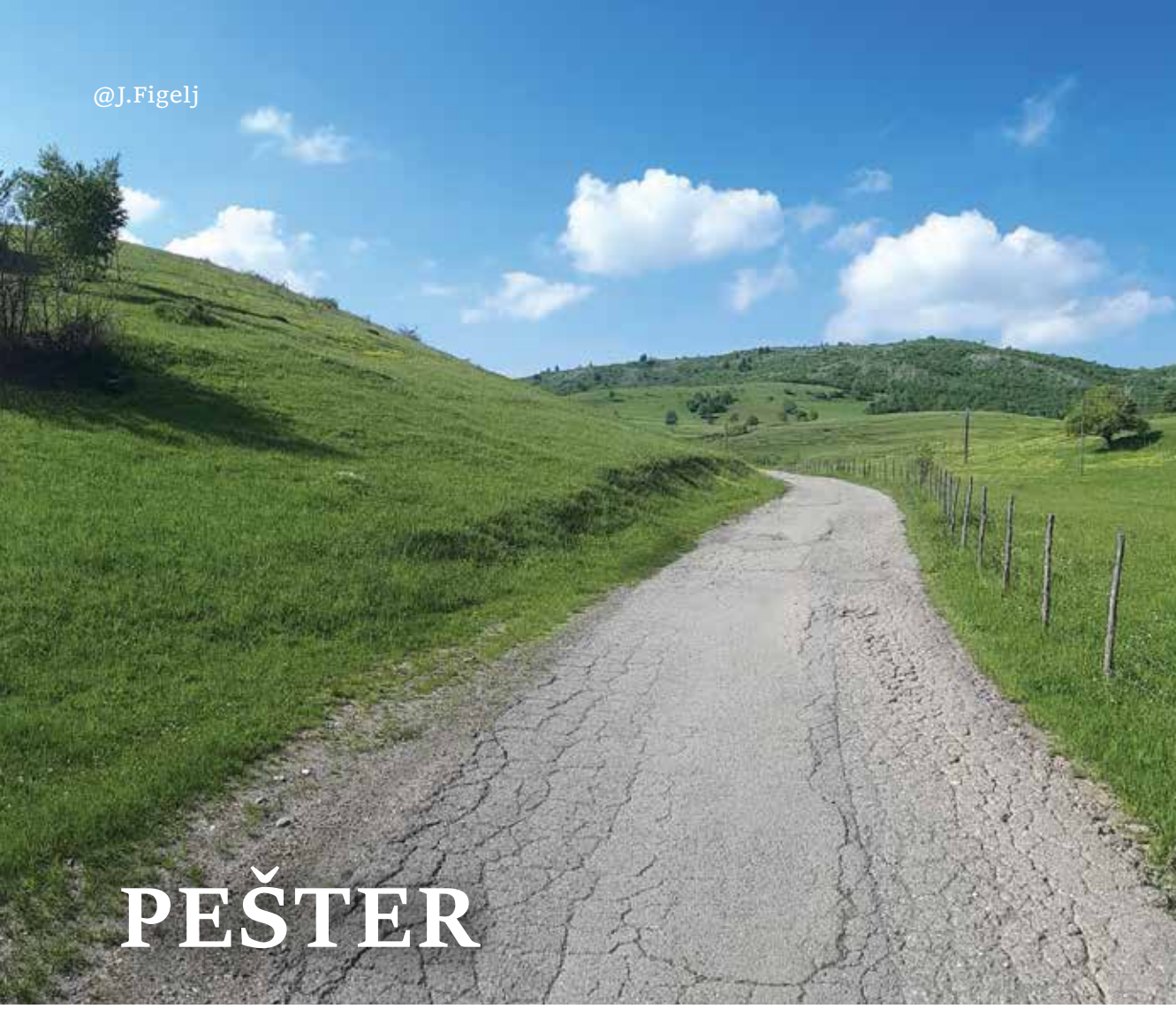
Balkan Snow Vole *Dinaromys bogdanovi*, @B.Rubinić

THREATS, PRESSURES AND ACTIVITIES WITH IMPACTS ON THE SITE

Main threat of Orjen Mountain is unplanned urbanisation of some areas and increased human pressure along most popular sites – i.e. Vrbanj. Infrastructure development, i.e. occasional plans of sky-resorts and similar projects, could be impacting wildlife, if not planned well. Illegal hunting takes place in some areas, especially of Rock Partridge and Common Quails. Unsustainable logging of old beech forest can be a problem for woodland species, especially woodpeckers.

CONSERVATION MEASURE RECOMMENDATIONS

Sustainable nature-oriented and environmentally-responsible urban planning, especially in herdsmen's huts areas and areas of traditional old villages, settlements. Strict control over illegal hunting and poisoning and persecution of violators. Sustainable long-term and nature friendly planning of logging and effective control.



PEŠTER

AREA	*12.294 ha*	
SPA CRITERIA	*C6*	
SITE CENTRE LOCATION	*43°03'52.12'' N*	*19°96'58.83'' E*
LAND COVER, LAND USE, HABITATS	*natural grassland*	*33%*
	transitional woodland/shrub	*31%*
	pastures	*10%*
	coniferous forest	*8%*
	broad-leaved forest	*7%*
	agriculture, natural areas	*7%*
	sparsely vegetated areas	*3%*
	coniferous forest	*2%*
PROTECTION STATUS (HA, %)	*Đalovića klisura (gorge) 1.600 ha (13,0%)*	
ADMINISTRATIVE REGIONS	*Bijelo Polje, Berane*	

GENERAL SITE CHARACTER

Pešter is a large mountain karst plateau. The major part of the area is located in South-Western Serbia, but a SW part of the plateau lies in what is now a central part of the Northern Montenegro. Although it is situated at an altitude between 1.150 and 1.400 m a.s.l. this extensive plateau is actually a large karst polje, the highest one in the Balkans. It is surrounded by mountain ranges of Jadovnik, Zlatar, Golija and others (1.600 – 1.800 m a.s.l.), and being a karst polje it is rich in karst ruptures and has an extensive underground labyrinth of caves. Pešter got its name from numerous caves, called "peć" or "pećina" in Slavic languages. The most famous cave and gorge complex is Đalovića klisura (gorge) with Đalovića cave on Pešter's South-Western fringe. Pešter was once a shallow lake that gradually euthropicated and sank through karst sink-holes, living behind numerous wetland remains, peat bogs, river meanders and lush grasslands. The Montenegrin part is drier and not abundant with marshy habitats. The prevailing habitat feature of this sparsely populated area are extensive pastures and natural grasslands, interrupted by patches of fields in dolinas and slopes with accumulated soil, patches of bush and hedge-rows, bare and rocky pinnacles and small stands of oak and pine forests.

QUALITY AND ORNITHOLOGICAL IMPORTANCE

Grazing and traditional agriculture have a positive impact on nature in many areas of Montenegro, maintaining mosaic cultural landscapes and birds that are linked to this type of environment. Pešter is one of best examples how nature and traditional agriculture go hand in hand. The birds of Pešter area are mostly linked to extensive pastures and grasslands on one hand and bushy hedges on the other. Barred Warblers *Sylvia nisoria*, Nightingales *Luscinia megarhynchos*, Red-backed *Lanius collurio* and Lesser Grey Shrikes *L. minor* and Hoopoes *Upupa epops* inhabit lusher areas with prevailing mesophile vegetation, while Rock Partridges *Alectoris graeca*, Tawny Pipits *Anthus campestris* and Rufous-tailed Rock Trushes *Monticola solitarius* can be found in drier parts. Wood Larks *Lullula arborea* however depend on mixture of both, adding a bit of tree-stands or forest fragments to a most suitable combination.

CRITERIA SPECIES	CRITERION	THRESHOLD	POPULATION ESTIMATE			
			MIN	MAX	UNIT	SEASON
Alectoris graeca	C1	40 p	100	130	p	R
Lanius minor	C6	Top 5 sites (3.)	10	15	p	B
Lullula arborea	C6	Top 5 sites (3.)	207	415	p	B
Sylvia nisoria	C6	Top 5 sites (3.)	218	435	p	B

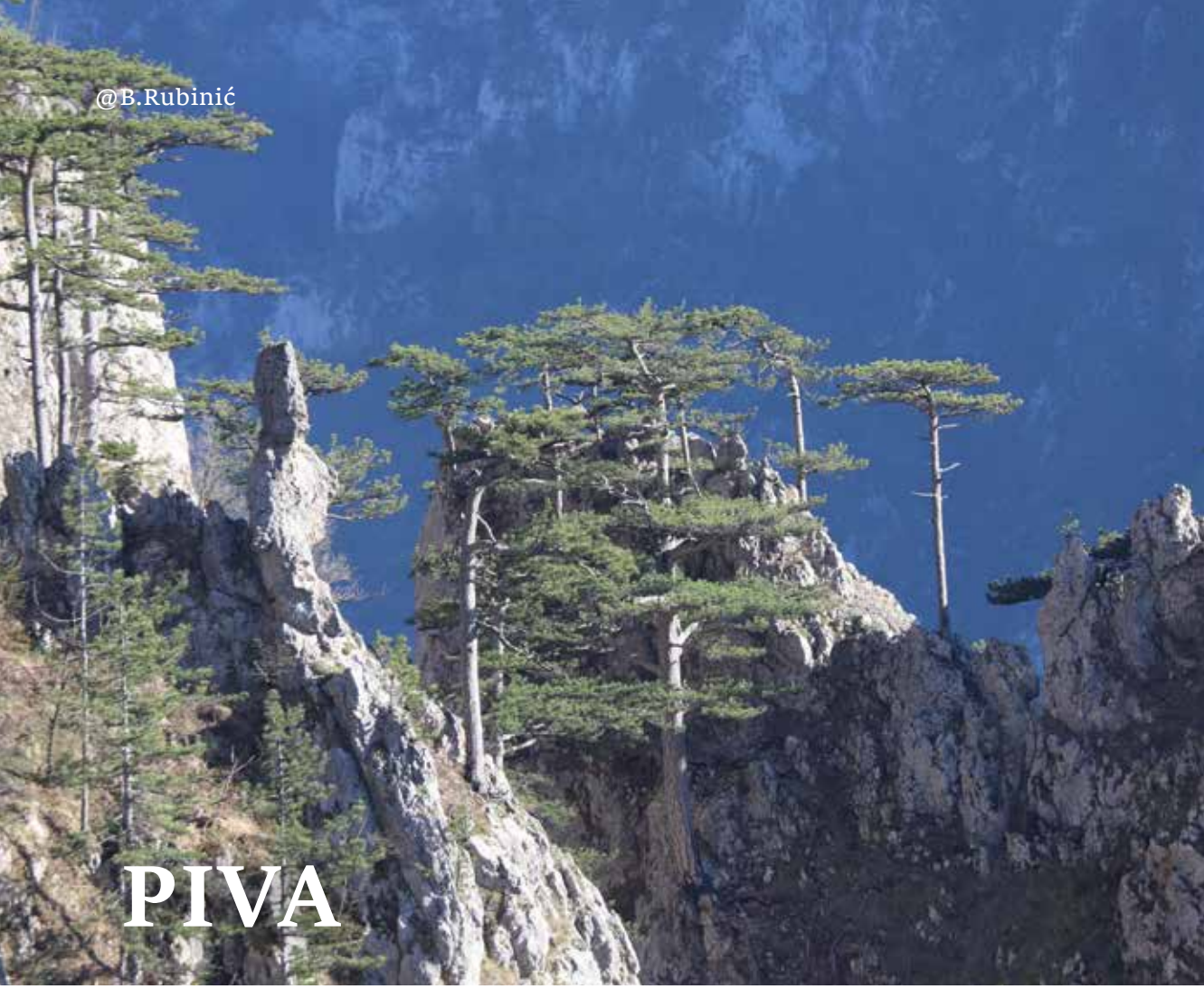
THREATS, PRESSURES AND ACTIVITIES WITH IMPACTS ON THE SITE

Main threats of this area are land abandonment and re-forestation. Once extensively managed fields, hay meadows and pastures are getting overgrown with the succession of bushes and eventually transform into woodland.

CONSERVATION MEASURE RECOMMENDATIONS

The long-term existence of Ortolan Bunting and other species of open rocky grasslands with tree and arable land structures are dependent on traditional agriculture techniques and sustainable management of mosaic landscapes.

@B.Grubač



PIVA

AREA	*50.438 ha*	
SPA CRITERIA	*C1, C6*	
SITE CENTRE LOCATION	*43°21'25.88'' N*	*18°85'92.92'' E*
LAND COVER, LAND USE, HABITATS	*natural grassland*	*24%*
	transitional woodland/shrub	*23%*
	broad-leaved forest	*19%*
	mixed forest	*10%*
	sparsely vegetated areas	*8%*
	agriculture, natural areas	*5%*
	bare rock	*4%*
	coniferous forest	*4%*
	water bodies	*3%*
PROTECTION STATUS (HA, %)	*Nature Park Piva 32.478 ha (64,4%)*	
ADMINISTRATIVE REGIONS	*Plužine*	

GENERAL SITE CHARACTER

Piva is a river and a wider area in the Nort-Western part of Montenegro, bordering Durmitor Mountain range from the East and the border with Bosnia and Herzegovina from the West. Highest peaks of this mountainous range are Bioč, Maglić and Volujak massifs, hence the name, rising 2.396 m a.s.l. at its highest point of Veliki Vitao. The area of mixed and broadleaved forests and extensive grassy and rocky undulating plains is a natural connection and a wildlife corridor between Durmitor National Park and the Sutjeska National Park in Bosnia and Herzegovina. Two thirds of the area of proposed SPA have been designated as Nature Park in 2015. The area has a diverse range of ecosystems, ranging from lower parts of Piva, Tara and Komarnica river valleys that are influenced by warm sub-Mediterranean air currents, having thermophile oak forests, Dinaric forests with prevailing Balkan Beech *Fagus moesiaca* and Silver Fir *Abies alba*, and rising to mountainous plateaus with subalpine pastures and alpine rocky tundra in the highest peaks of the mountain massif. This area has some of the deepest and steepest canyons in the country, with loose stands of Black *Pinus nigra*, Scots *P. sylvestris* and Bosnian Pines *P. heldreichii* growing on rocky edges and steep slopes. Piva river is one of the largest rivers in the North of the country and the only larger river in Montenegro with a dam, used for production of electric energy in the Mratinje hydro power-plant. As a result a long Plužine or Piva accumulation lake characterizes central part of the area, while small and picturesque alpine lakes mark higher mountainous area of the Bioć-Maglić-Volujak massif.

QUALITY AND ORNITHOLOGICAL IMPORTANCE

About half of the area of Piva are open areas with sparse, only locally richer vegetation, rocky outcrops, canyon edges and mountain pinnacles. This is a characteristic habitat of Rock Partridge *Alectoris graeca* and some other birds of rocky areas, and a hunting area of Golden Eagles *Aquila chrysaetos* that nest in canyons encompassing Piva plateau. Coniferous forests of Scots Pine, Norway Spruce *Picea abies* and Silver Fir host a significant population of Capercaillie *Tetrao urogallus*, but also many other boreal species like Hazel Grouse *Bonasa bonasia*, Boreal *Aegolius funereus* and Pygmy Owls *Glaucidium passerinum*, Black *Dryocopus martius* and Three-toed Woodpeckers *Picoides tridactylus* and others. Dinaric beech forests in the Westernmost parts of the area are inhabited by a small population of Ural Owls *Strix uralensis*, in Montenegro rare species, restricted to the extreme W of the country, and by more widely distributed White-backed *Dendrocopos leucotos* and Middle-spotted Woodpeckers *Leiopicus medius*. In few lowest warmer valleys in Plužine and Šćepan Polje areas with sub-Mediterranean influence a small population of European Turtle Doves *Streptopelia turtur*, Lesser Grey Shrikes *Lanius minor*, Barred Warblers *Sylvia nisoria*, Syrian Woodpeckers *Dendrocopos syriacus* and similar birds of warmer continental climate can be found.

CRITERIA SPECIES	CRITERION	THRESHOLD	POPULATION ESTIMATE			
			MIN	MAX	UNIT	SEASON
Alectoris graeca	C1	40 pairs	100	300	p	R
Tetrao urogallus	C6	Top 5 sites (5.)	30	60	p	R
Streptopelia turtur	C6	20 pairs	23	46	p	B
Strix uralensis	C6	Top 5 sites (3.)	5		p	R
Aquila chrysaetos	C6	Top 5 sites (5.)	3	4	p	R

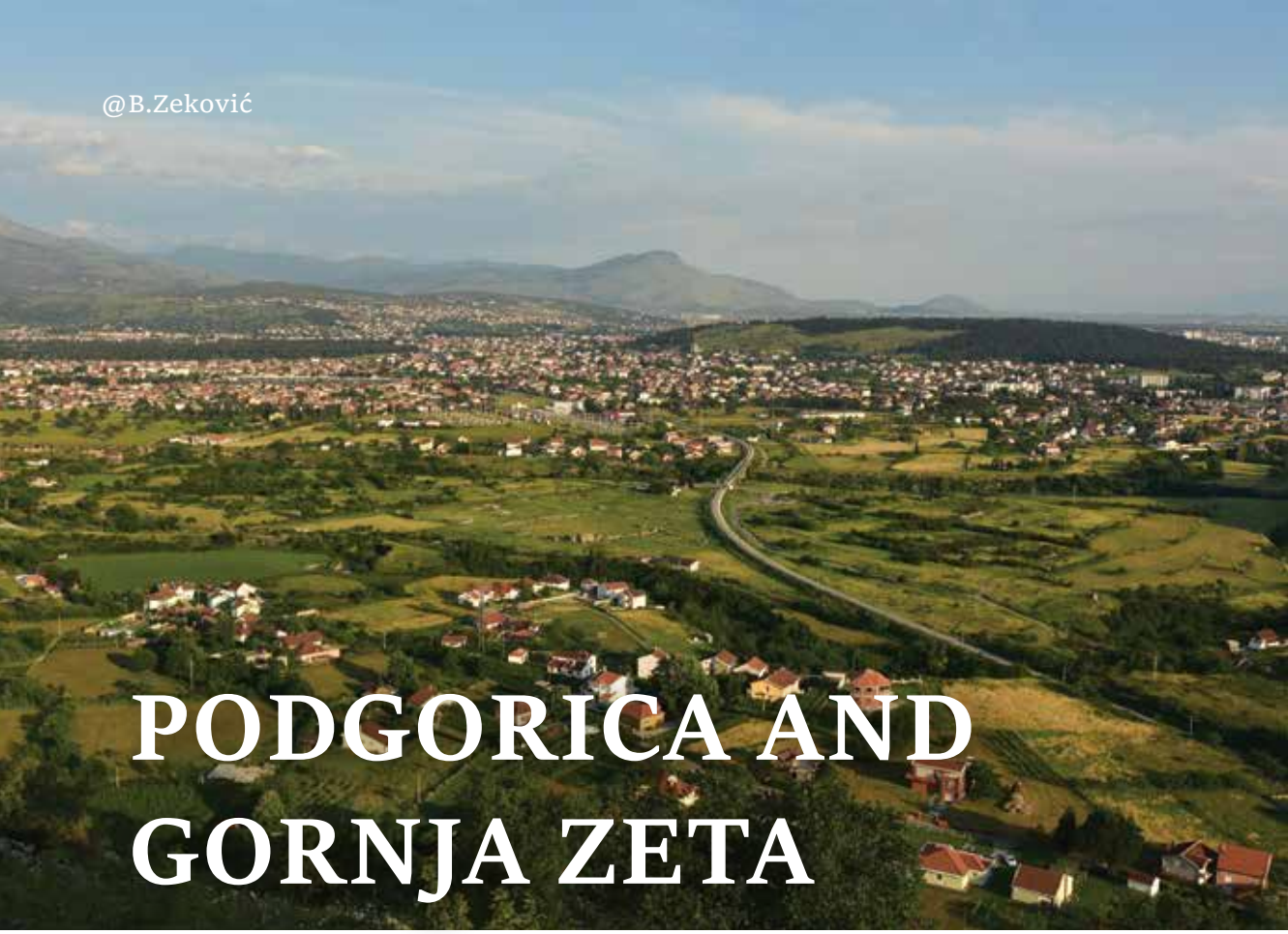
THREATS, PRESSURES AND ACTIVITIES WITH IMPACTS ON THE SITE

Main threats are logging of old-growth forests and increased human presence around popular touristic spots. Few areas in the area, especially some traditional areas with herdsmen's huts (i.e area of Nedajno) are and can be a subject of continuous unplanned urbanisation, while disturbance by 4x4 vehicles can pose threat to some species of birds and other animals. Abandonment of pastures and reforestation can have a negative effect for the birds of open cultural landscapes and for some raptors, i.e. Golden Eagle.

CONSERVATION MEASURE RECOMMENDATIONS

Sustainable logging, traditional land use and regulated management of tourists. The use of 4x4 vehicles outside of prescribed areas within the network of existing roads should be banned.


@B.Rubinić



PODGORICA AND GORNJA ZETA

AREA	2.654 ha	
SPA CRITERIA	C6	
SITE CENTRE LOCATION	42°41'53.41'' N	19°21'69.23'' E
LAND COVER, LAND USE, HABITATS	discontinuous urban fabric	23%
	complex cultivation patterns	21%
	non-irrigated arable land	12%
	pastures	11%
	green urban areas	9%
	transitional woodland/shrub	6%
	mineral extraction sites	6%
	beaches, dunes, sands	3%
	water courses	3%
	agriculture, natural areas	3%
	industrial or commercial units	1%
	sparsely vegetated areas	1%
PROTECTION STATUS (HA, %)	Magara Cave	
ADMINISTRATIVE REGIONS	Podgorica	

GENERAL SITE CHARACTER

Although an urban area already in Roman times (Duclea/Duklja) the capital of Montenegro, Podgorica is a relatively modern city in terms of its recent extent. As such the city has retained a lot of its natural environment. The green areas of Podgorica are largely areas of semi-natural vegetation that are not managed in an invasive way. Although the original forests of mostly oak species are largely substituted by non-native trees (i.e pines, cedars, planes etc.), the bushes and other vegetation are mostly native. Many suburban areas of Podgorica have retained plots of land with natural, mostly steppic vegetation, while peach, apricot, plum and walnut orchards are common and widespread. In suburban areas traditional pastures prevail, while many areas along and between Sitnica and Mareza rivers are wetter and sometimes marshy. Small vineyards and occasional fields can be also found in the area. Another characteristic feature of this area is the natural stream of Morača River, one of Montengro's largest rivers, and the most important tributary of Skadar Lake. The area of lower Morača course between Podgorica and North shores of Skadar Lake is called Gornja Zeta area. Morača River has natural conglomerate banks that are steep in the city area and become gentle towards the Skadar lake. The river bed is rich with gravel on its shores and forms large bare gravel islands, especially towards the mouth to the Skadar Lake. In this area also some alluvial forest fragments remain. The climate is typically Mediterranean, with very hot summers and mild winters.

Little Egrets *Egretta garzetta* and Black-crowned Night Heron *Nyctycorax nyctycorax*, @M.Jovićević

QUALITY AND ORNITHOLOGICAL IMPORTANCE

Like the character of the area that is divided to river and suburban green parts, also bird species of this area could be divided to birds that are linked to Morača River and those linked to the green areas of Montenegro's capital and its suburbia. The first group of birds are different waterbirds, especially Pygmy Cormorants *Mycrocarbo pygmaeus*, Little *Egretta garzetta*, and Great White Egrets *Ardea alba*, Squacco *Ardeola ralloides*, and Night Herons *Nyctycorax nyctycorax* and Glossy Ibises *Plegadic falcinellus*. These birds nest in nearby Skadar Lake and use the Morača River bed for feeding and resting. It is possible that a small number of Night Herons might be nesting in the alluvial forests of this area. Along with herons and egrets also terns and gulls use the river for same reason, most numerous being Yellow-legged Gulls *Larus michahellis*, Black-headed Gulls *Croicocephalus ridibundus*, but also Whiskered *Chlidonias hybridus* and Common Terns *Sterna hirundo* that breed on Skadar Lake and feed with small fish in lower parts of the Morača River in the areas of Gornja and Donja Zeta. The orchards, tree stands, parks and native forest fragments are a habitat of European Turtle Dove *Streptopelia turtur*, Syrian Woodpecker *Dendrocopos syriacus* and a large population of Scops *Otus scops* and Little Owls *Athene noctua* that mostly nest in old houses.

CRITERIA SPECIES	CRITERION	THRESHOLD	POPULATION ESTIMATE			
			MIN	MAX	UNIT	SEASON
Streptopelia turtur	C1	20 pairs	45	90	p	B
Plegadis falcinellus	C6	Top 5 sites (4.)	15		i	B
Nyctycorax nyctycorax	C6	Top 5 sites (5.)	15		I	B
Ardeola ralloides	C6	Top 5 sites (5.)	15		i	B
Egretta garzetta	C6	Top 5 sites (4.)	15	50	i	R
Mycrocarbo pygmaeus	C6	Top 5 sites (5.)	100		i	R
Chlidonias hybrida	C6	Top 5 sites (3.)	15		i	B
Dencrocopos syriacus	C6	Top 5 sites (5.)	30	50	p	R

Hermann's Tortoise *Testudo hermanni*, @B.Rubinić

Olivaceous Warbler *Iduna pallida*, @R.Mihelič

THREATS, PRESSURES AND ACTIVITIES WITH IMPACTS ON THE SITE

The remaining fragments of natural and semi-natural steppic areas around Podgorica are heavily threatened by urbanisation extensions of Podgorica, degradation into industrial areas, and the growing road network. Additional threat is uncontrolled solid waste disposal, and pollution by communal waters, degradation of natural habitats with uncontrolled network of dirt roads, and conversion into fields and pastures. Completely unsustainable and uncontrolled gravel extraction from Morača river is a huge problem, especially in the area of Botun and Ljajkovići. Highly toxic waste waters (red mud) basins of the abandoned aluminium factory (Kombinat aluminiuma Podgorica-KAP) pose a constant threat not only to the area of Gornja Zeta and lower stream of Morača River, but to the whole Skadar Lake water basin. Pollution of the soil from aerial dispersal of toxic elements from these basins is a problem for human population and natural environment in the vicinity.

CONSERVATION MEASURE RECOMMENDATIONS

Sustainable and nature-oriented responsible urban planning and careful management of habitat use of the area. Efficient control of illegal gravel extraction and sustainable planning of legal gravel extraction in Morača river. Efficient management and remediation of the waste water basins of the KAP.

PROKLETIJE MOUNTAINS

AREA	22.067 ha	
SPA CRITERIA	C1, C6	
SITE CENTRE LOCATION	42°54'43.98'' N	19°90'94.57'' E
LAND COVER, LAND USE, HABITATS	broad-leaved forest	30%
	coniferous forest	18%
	sparsely vegetated areas	15%
	mixed forest	11%
	transitional woodland/shrub	10%
	agriculture, natural areas	7%
	natural grassland	5%
	bare rock	2%
	complex cultivation patterns	1%
	pastures	1%
PROTECTION STATUS (HA, %)	National Park Prokletije 16.038 ha (72,7%)	
ADMINISTRATIVE REGIONS	Plav, Gusinje	

GENERAL SITE CHARACTER

Prokletije, in Albanian Bjeshkët e Nemuna or Cursed Mountains, sometimes called also the Albanian Alps, are the Easternmost and at the same time the most prominent and highest mountain chain of the Dinaric mountain chain. This steep, rugged and inhospitable mountain range stretches at the borders of three neighbouring countries: Montenegro, Kosovo and Albania and reaches 2.694 m a.s.l. at its highest point of Maja Jezerce or Jezerski vrh (Lake peak) in Albania. In Prokletije also the highest peak of Montenegro – Zla Kolata or Kollata e Keque (Evil Kolata), 2.534 m a.s.l. and Kosovo (Gjeravica/ Đeravica, 2.656 m a.s.l.) can be found. Due to strong glacial processes in Pleistocene numerous traces of former glaciers and the fluvio-glacial erosions can be found in Prokletije, including glacial lakes, valleys and moraines. In higher parts of the mountain chain sources of main rivers of the area originate: Lim, Cijevna, Valbona, Pećka Bistrica and so on. Some of them form deep (over 1.000 m) canyons in all the three countries. From the West Prokletije are divided by Lim valley, and from the East by Metohija/Dukagjin basin in Kosovo, while to the South Prokletije gradually descend towards the Skadar Lake basin. Being a large area, Prokletije are characterized by diverse habitats. Fertile Lim valley with traditional mosaic agriculture ascends into broadleaved Balkan Beach *Fagus moesiaca* and Sycamore *Acer pseudoplatanus* forests, mixed with Silver Fir *Abies alba* and Norway Spruce *Picea abies* a little higher and turns into coniferous forests of these two species, Macedonian *Pinus peuce* and Bosnian Pines *P. heldreichii* in highest areas. Mountain pastures are still active over most of the mountain range and both sheep and cattle are commonly kept in mountain herdsman's huts during summer months. Sub-Mediterranean and sub-alpine climate collide in the area, but generally winters are long and summers short and fresh in this vast mountain chain with 40 smaller mountain ridges among which a majority rise over 2.000 m high.

@M.Šoškić

QUALITY AND ORNITHOLOGICAL IMPORTANCE

Broadleaved and mixed Dinaric beech forests are a typical habitat for almost all European species of woodpeckers, including White-backed *Dendrocopos leucotos*, Grey-headed *Picus canus*, Black *Dryocopus martius* and Middle-spotted Woodpeckers *Leiopicus medius*. Three-toed Woodpeckers *Picoides tridactylus* are more common in pure coniferous forests, where we can found also other usual boreal species of birds, typical for this type of habitat in Northern Montenegro, namely Boreal *Aegolius funereus* and Pygmy Owls *Glaucidium passerinum*, Hazel Grouse *Bonasa* bonasia and a strong and important population of Capercaillie *Tetrao urogallus*. High and steep rocky pastures are the habitat of Rock Partridge *Alectoris graeca* and other characteristic species of this environment. A small population of Peregrine Falcons that used to be breeding in cliffs above Lim valley has probably entirely disappeared due to deliberate persecution, while few pairs of Golden Eagles *Aquila chrysaetos* still persist in several nesting locations.

CRITERIA SPECIES	CRITERION	THRESHOLD	POPULATION ESTIMATE			
			MIN	MAX	UNIT	SEASON
Alectoris graeca	C1	40 pairs	60	120	p	R
Bonasa bonasia	C6	Top 5 sites (4.)	195	390	p	R
Tetrao urogallus	C6	Top 5 sites (2.)	60	85	p	R
Picoides tridactylus	C6	Top 5 sites (5.)	143	286	p	R

Fire Salamander *Salamandra salamandra*, @B.Rubinić

THREATS, PRESSURES AND ACTIVITIES WITH IMPACTS ON THE SITE

Few areas in the area, especially some traditional areas with herdsmen's huts (i.e area of Bogićevica) are and can be a subject of continuous unplanned urbanisation, while disturbance by 4x4 vehicles can pose threat to some species of birds and other animals. Hydropower construction of mini-hydro power-plants is a real threat and that not only harm the natural course of little rivers and streams of this area, but also inevitably expose previously inaccessible forest patches to erosion and logging. Land abandonment is an issue especially in higher areas, where pastures are being continuously overgrown with succession of scrubs and trees, making it less attractive for Rock Partridges and other species of rocky landscapes. Cutting of large mature trees and opening of new logging areas is a real threat. Deliberate poisoning of falcons is most likely the cause for the disappearance of Peregrine Falcons *Falco peregrinus* from the area.

CONSERVATION MEASURE RECOMMENDATIONS

Hydropower development should be banned or a subject of extremely cautious assessment and geographical location. Encouraging of alternative sustainable livelihoods that would help maintaining mountainous pastures and traditional alpine herding. Cutting of large mature trees and opening of new logging areas should be banned in National Park and carefully controlled in the surrounding buffer areas. The use of 4x4 vehicles outside of prescribed areas within the network of existing roads should be banned. Strict control over illegal poisoning and persecution of violators.

KRIČAK

AREA	*46.752 ha*	
SPA CRITERIA	*C6*	
SITE CENTRE LOCATION	*43°13'42.07'' N*	*19°44'32.85'' E*
LAND COVER, LAND USE, HABITATS	*coniferous forest*	*45%*
	agriculture, natural areas	*23%*
	transitional woodland/shrub	*9%*
	mixed forest	*8%*
	natural grassland	*8%*
	broad-leaved forest	*6%*
	pastures	*1%*
PROTECTION STATUS (HA, %)	/	
ADMINISTRATIVE REGIONS	*Pljevlja, Bijelo Polje, Mojkovac*	

GENERAL SITE CHARACTER

Kričak is an area that lies roughly between the three towns of Northern Montenegro – Pljevlja, Bijelo Polje and Mojkovac. This hilly plateau ascends steeply from the Tara River canyon from the South-West and more gently descends to the Lim River valley in the East. In the West the area is limited by Ljubišnja Mountain and in the North by Pljevlja basin. The extensive Kričak area expands some 15 km in width and some 35 km in length, presenting a relatively uniform geographical and morphological unit of karst plateau rich with karstic sinkholes, valleys, pinnacles and bathing hills. The name of the area is not widely known in Montenegro and is a historic name of non-Slavic tribe that once lived in this area. Kričak area starts in Kosanica village at the foothills of Ljubišnja Mountain and follows the right banks of Tara canyon across Čavanj and Stožer to the Crvena Lokva and Prošćenske planine towards Mojkovac and Bijelo Polje. In terms of habitats coniferous forests of Norway Spruce *Picea abies* and Silver Fir *Abies alba* prevail, making this area the largest complex of this boreal type of forests. Although interrupted with pastures and scrublands, plots of forests that have been destroyed with fire, wind and snow, this extensive area provides an important natural refugee for boreal species and a corridor for large carnivores moving between Ljubišnja Mountain and Bosnian Herzegovinian forested areas in the West towards Šekular, Mokra and finally Prokletije Mountain group in the East. Steep Tara canyon edges are partly rocky and grassy, partly covered with broadleaved and mixed forests.

@B.Rubinić

QUALITY AND ORNITHOLOGICAL IMPORTANCE

Although completely unknown and undiscovered in ornithological sense until very recent research were conducted, due to its large area and the continuity of boreal coniferous and mixed forests, Kričak is for many boreal species among most important areas in the country. Both densities and absolute populations of many boreal species reach very high figures in the area of Kričak, which is as such the most important area in the country for Hazel Grouse *Bonasa bonasia*, Pygmy *Glaucidium passerinum* and for Boreal Owl *Aegolius funereus*. The populations of Three-toed Picoides tridactylus and Black Woodpeckers *Dryocopus martius* are similarly very significant, while Capercaillies *Tetrao urogallus* are far less numerous here than on the opposite bank of the Tara canyon where the forests are generally in much better condition. The frequency of different forest clearings, pastures, hay grasslands and fields, but also rocky habitats with sparse vegetation along the Tara canyon edge make this area attractive also for some open landscape species like Tawny Pipit *Anthus campestris* and Woodlark *Lullula arborea*.

CRITERIA SPECIES	CRITERION	THRESHOLD	POPULATION ESTIMATE			
			MIN	MAX	UNIT	SEASON
Bonasa bonasia	C6	Top 5 sites (1.)	345	690	p	R
Tetrao urogallus	C6	Top 5 sites (4.)	40	70	p	R
Glaucidium passerinum	C6	Top 5 sites (1.)	169	338	p	R
Aegolius funereus	C6	Top 5 sites (1.)	236	473	p	B
Picoides tridactylus	C6	Top 5 sites (4.)	148	297	p	R
Anthus campestris	C6	Top 5 sites (4.)	46	93	p	B

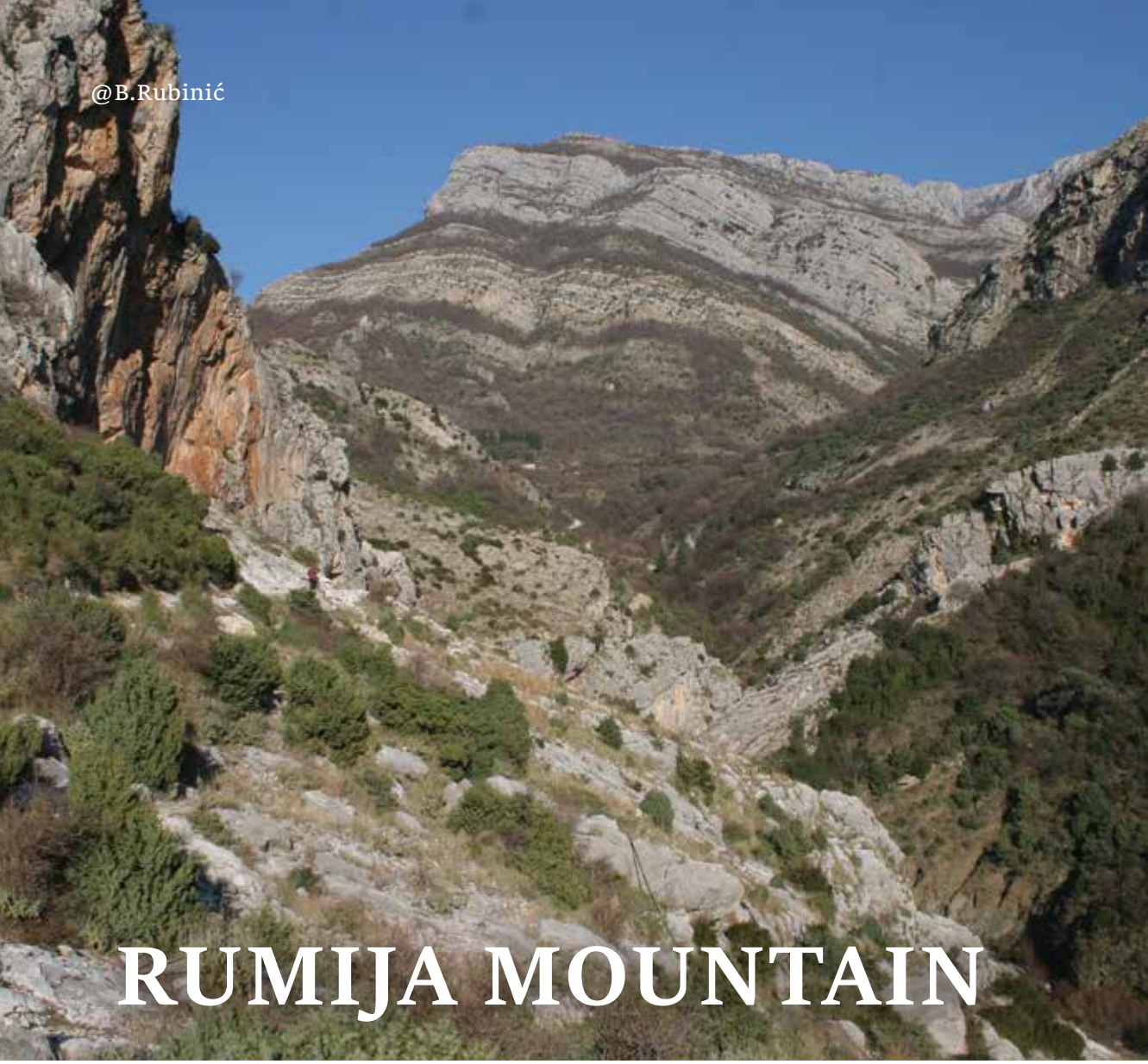
Whinchat *Saxicola rubetra*, @B.Rubinić

THREATS, PRESSURES AND ACTIVITIES WITH IMPACTS ON THE SITE

Main threat of the area is unsustainable logging. Higher areas will gradually become overgrown with forest if the trend of reforestation due to abandonment of pastoralism continues.

CONSERVATION MEASURE RECOMMENDATIONS

Sustainable and if necessary locally banned logging in sensitive areas (establishment of forest reserves). Banned 4x4 vehicles use in sensitive areas and everywhere outside official roads.



RUMIJA MOUNTAIN

AREA	*27.784 ha*	
SPA CRITERIA	*C1, C6*	
SITE CENTRE LOCATION	*42°09'90.53'' N*	*19°22'58.78'' E*
LAND COVER, LAND USE, HABITATS	*broad-leaved forest*	*54%*
	transitional woodland/shrub	*18%*
	sparsely vegetated areas	*14%*
	agriculture, natural areas	*7%*
	complex cultivation patterns	*5%*
	discontinuous urban fabric	*1%*
PROTECTION STATUS (HA, %)	/	
ADMINISTRATIVE REGIONS	*Bar, Ulcinj*	

GENERAL SITE CHARACTER

Rumija is Montenegro's Southernmost mountain, situated between Skadar Lake and Adriatic Sea. The highest point of Rumija has the same name and is 1.594 m high, rising steeply 1.600 m above from the depression of Skadar Lake and giving the whole ridge a very prominent look. In general the mountain is divided into two ridges, along which a narrow valley stretches in West-East direction. While the two ridges are very dry and rocky, the SW parts in the valley are lusher and a few small streams originate there. In the valley, on Rumija's North-Eastern slopes above Skadar Lake and in some other parts thermophile oak forests of Macedonian *Quercus trojana*, Downy *Q. pubescens*, Holm *Q. ilex* and other oaks. On higher elevations mostly Balkan Beech Fagus moesiaca forests can be found, locally old and well preserved. One of the most prominent natural features of Rumija are ancient stands of Sweet Chestnut *Castanea sativa* around Koštajnica (named after chestnuts) and Livari villages at its NE slopes. Around the villages that lie both on its Northern and Southern slopes mosaic traditional landscapes of small fields, vineyards, orchards, pastures, rocky and bushy hedge-rows can be found, often intertwined by succession of garigue, maquis and Mediterranean forests. Higher areas are prominent with its rocky sparsely vegetated outcrops and bathing peaks, covered with rocky pastures. Most of the area is heavily influenced by Mediterranean climate, very dry and hot in the summer, while mild and generally snowless apart from the highest peaks over most of the winter.

Black-headed Bunting *Emberiza melanocephala*, @M.Jovićević

QUALITY AND ORNITHOLOGICAL IMPORTANCE

The warm Mediterranean slopes of Rumija mountain with its traditional cultural landscape, stands of thermophile forest and loose maquis are a typical habitat for many Mediterranean and thermophile species of birds. Black-headed Buntings *Emberiza melanocephala*, Subalpine *Sylvia cantillans* and Eastern Orphean Warblers *S.crassirostris*, Black-eared Wheatears *Oenanthe hispanica*, Levant Sparrowhawks *Accipiter brevipes*, Syrian Woodpeckers *Dendrocopos syriacus* and European Turtle Doves *Streptopelia turtur*. A large population of Eurasian Eagle Owls *Bubo bubo* nests at the slopes of the mountain, hunting in villages and open areas of the mountain in the night, while Golden *Aquila chrysaetos*, Short-toed Snake Eagles, and European Honey-buzzards *Pernis apivorus* use the same areas during the day. Bare rocky areas are home to a large population of Rock Partridges *Alectoris graeca*, Blue Rock Thrushes *Monticola solitarius*, Tawny Pipits *Anthus campestris*, Rock Buntings *Emberiza cia* and Western Rock Nuthatches *Sitta neumayer*. A small population of White-backed Woodpeckers *Dendrocopos leucotos* breed in beech forests, while lower oak forests are preferred by Middle-spotted Woodpeckers *Leiopicus medius*.

CRITERIA SPECIES	CRITERION	THRESHOLD	POPULATION ESTIMATE			
			MIN	MAX	UNIT	SEASON
Alectoris graeca	C1	40 pairs	160	320	p	R
Streptopelia turtur	C1	20 pairs	158	316	p	B
Bubo bubo	C6	Top 5 sites (2.)	13	15	p	R
Accipiter brevipes	C6	Top 5 sites (4.)	10	15	p	B
Emberiza hortulana	C6	Top 5 sites (4.)	10	15	p	B

THREATS, PRESSURES AND ACTIVITIES WITH IMPACTS ON THE SITE

Main threat of the area is abandonment of the traditional land use and poor urban planning. Higher areas will gradually become overgrown with forest if the trend of reforestation due to abandonment of pastoralism continues. Poaching of Rock Partridge, deliberate poisoning of falcons, but also poisoning of carcasses to exterminate wolves and jackals can pose a huge threat for raptors. Such cases in the past were most probably a cause for extinction of the last colony of Griffon Vultures *Gyps fulvus* in Montenegro that apparently bred in the area in until 1990. Unsustainable logging of old beech forest can be a problem for woodland species, especially woodpeckers.

CONSERVATION MEASURE RECOMMENDATIONS

Sustainable nature-oriented and environmentally-responsible urban planning, especially in and around the traditional villages. Strict control over illegal hunting and poisoning and persecution of violators. Sustainable long-term and nature friendly planning of logging and effective control.

@B.Rubinić

SINJAJEVINA

AREA	39.240 ha	
SPA CRITERIA	C1, C6	
SITE CENTRE LOCATION	42°96'46.42'' N	19°32'19.37'' E
LAND COVER, LAND USE, HABITATS	sparsely vegetated areas	29%
	natural grassland	27%
	transitional woodland/shrub	19%
	broad-leaved forest	9%
	bare rock	8%
	mixed forest	3%
	agriculture, natural areas	3%
	moors and heathland	1%
	coniferous forest	1%
PROTECTION STATUS (HA, %)	/	
ADMINISTRATIVE REGIONS	Kolašin, Mojkovac, Žabljak, Šavnik	

GENERAL SITE CHARACTER

Sinjajevina is a relatively flat, bare grassy and extensive mountain plateau in the central part of Northern Montenegro, characteristically naturally divided by Tara River canyon from the East and North, with Bukovica River canyon from the South and with Durmitor Mountain massif from the West. The majority of the plateau lies at about 1.500 m a.s.l. and stretches 40 km in length in the Dinaric NW-SE direction and around 15 km in width. This dry mountain plateau is full of karstic phenomena: dolinas, sinkholes, karstic valleys and poljes that compete with bathing hills, and only sometimes rougher rocky pinnacles. Most of Sinjajevina Mountan is tree-less, but although generally a dry karstic plain, the lower areas of the plateau are covered with lush green grasslands, locally even moors and were once full of grazing sheep, cows and free roaming horses. Higher areas that raise over 1.800 and 2.277 m at its highest peak (Babin zub) are rockier and covered with sparser natural grasslands. Only the fringes of the steep table shape plateau are covered with some bush and tree vegetation, mostly beech forests. Permanent settlements are rare and confined to the edges of the plateau and seasonal and traditional summer grazing is becoming scarcer, with traditional herdsmen's huts gradually becoming abandoned. Sinjajevina is a natural continuation of Durmitor Mountain and its Lake plateau and as such forms the largest karstic plateau and morphological unit in the North of Montenegro.

QUALITY AND ORNITHOLOGICAL IMPORTANCE

The main ornithological value of the Sinjajevina Mountain are vast expansions of the rocky areas with sparse grasslands on about 100 of its smaller and larger rounded peaks, protruding from the flatter plateau. Majority of the most important species of the area in a conservation sense inhabit these open spaces, among most prominent are Rock Partridge *Alectoris graeca*, Tawny Pipit *Anthus campestris*, Balkan Horned Lark *Eremophila alpestris balcanica*, and Rufous-tailed Rock Trush *Monticola saxatilis*. These areas are also the hunting ground of 5 to 10 pairs of Golden Eagles *Aquila chrysaetos* that nest in the surrounding canyons of Bukovica and Tara Rivers, few pairs of Short-toed Snake Eagles *Circaetus gallicus* and European Honey Buzzards *Pernis apivorus*. Sightings of some 15 individual large flocks of Griffon Vultures Gyps fulvus feeding on domestic animals' carrion have been reported. The few boreal forests at the edge of the plateau are inhabited by Capercaillies *Tetrao urogallus* and other boreal species and rare moors host a small population of Corncrake *Crex crex*.

CRITERIA SPECIES	CRITERION	THRESHOLD	POPULATION ESTIMATE			
			MIN	MAX	UNIT	SEASON
Alectoris graeca	C1	40 pairs	200	300	p	R
Gyps fulvus	C6	Top 5 sites		15	i	M
Lullula arborea	C6	Top 5 sites (5.)	178	357	p	B
Anthus campestris	C6	Top 5 sites (1.)	183	365	p	B

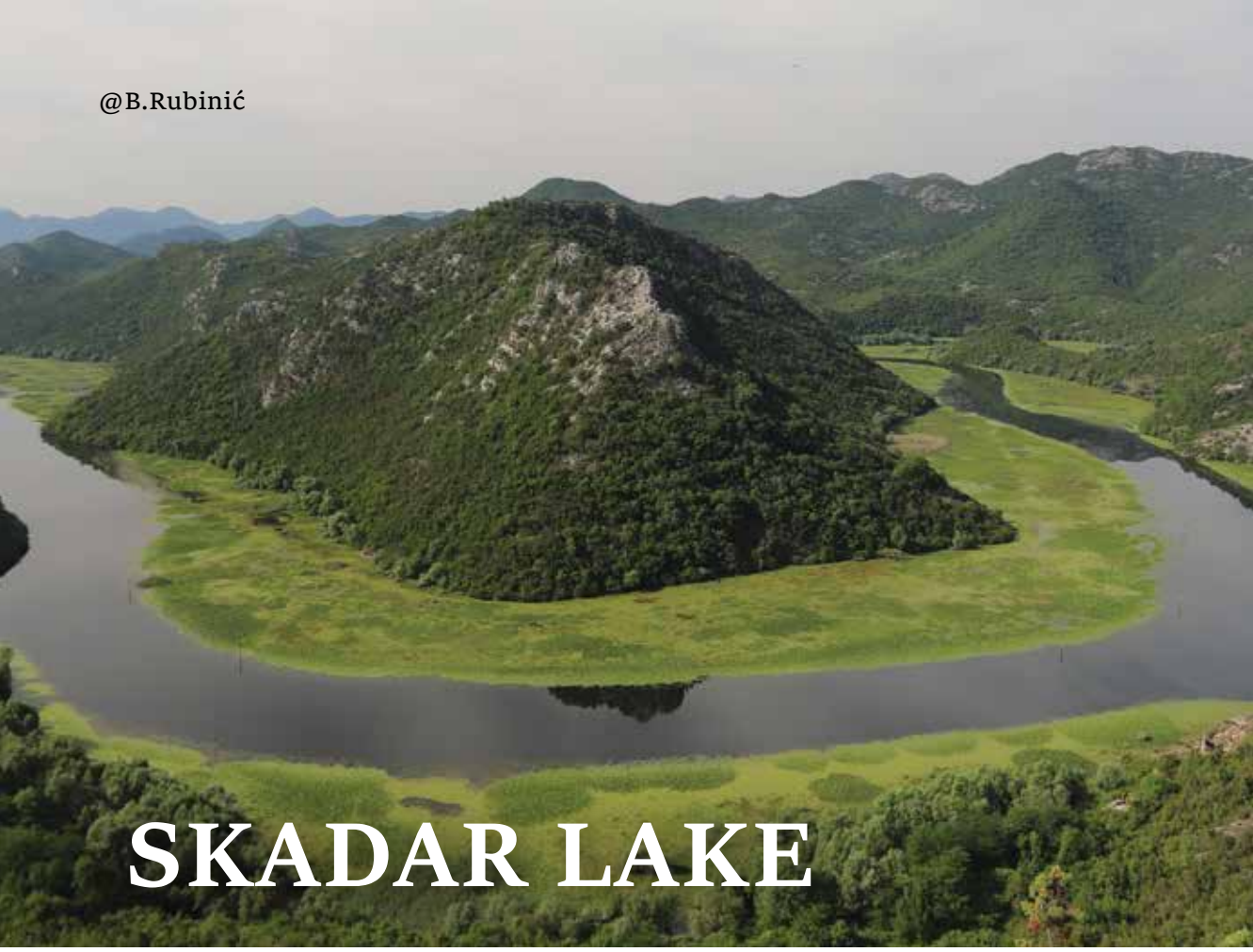
Common Rock Trush *Monticola saxatilis*, @M.Jovićević

THREATS, PRESSURES AND ACTIVITIES WITH IMPACTS ON THE SITE

Main threat of Sinjajevina is unplanned urbanisation of some areas and increased human pressure along most popular sites – i.e. Zabojsko Lake. Infrastructure development could be impacting wildlife if not planned carefully in the future. Unsustainable logging of the rare forest remains can be a problem for woodland species.

CONSERVATION MEASURE RECOMMENDATIONS

Sustainable nature-oriented and environmentally-responsible urban planning, especially in herdsmen's huts areas. Sustainable long-term and nature friendly planning of logging and effective control.



SKADAR LAKE

AREA	*47.393 ha*	
SPA CRITERIA	*C1, C2, C3, C4, C6*	
SITE CENTRE LOCATION	*42°24'99.43'' N*	*19°23'10.39'' E*
LAND COVER, LAND USE, HABITATS	*water bodies*	*46%*
	inland marshes	*21%*
	transitional woodland/shrub	*8%*
	complex cultivation patterns	*7%*
	agriculture, natural areas	*6%*
	broad-leaved forest	*5%*
	sparsely vegetated areas	*3%*
	discontinuous urban fabric	*2%*
	pastures	*1%*
	water courses	*1%*
	natural grassland	*1%*
PROTECTION STATUS (HA, %)	*Skadar Lake National Park 40.000 ha (84,4%)*	
ADMINISTRATIVE REGIONS	*Podgorica, Cetinje, Bar, Ulcinj*	

GENERAL SITE CHARACTER

Skadar Lake is the largest lake in the Balkan peninsula and one of the largest remaining fresh-water wetland complexes in the Mediterranean. The lake surface extends over 370 to 530 km², depending on the season and water abundance and is shared between Montenegro (two thirds of the surface) and Albania (one third). The shallow lake is 6 to 44 m deep and has eutrophic character, especially on its Northern shores that are richly overgrown with reed beds, peat bogs and boggy marshes, willows and other bushy and tree vegetation. Southern banks of the lake are less lush and mostly rocky, and around 50 islets can be found on the lake, mostly on its Southern shore. Main water source for Skadar Lake is Morača river that joins with Zeta, Cijevna, Sušica, Sitnica and Ribnica and other tributaries in Podgorica, just before it enters the lake. There are also many sublacustic (underwater) springs that fill the lake, while the water is drained from the lake as Bojana/Buna river at its South-Eastern shore. Skadar Lake's Northern shores are fertile patches of small fields, pastures, hay meadows, orchards and vineyards that are intersected with a thick net of mostly tree-hedges, forming a unique lowland mosaic culture landscape. Southern lake shores are rocky warm Mediterranean slopes, locally with sharp limestone karstic garigue and maquis vegetation and in other places with small villages, mostly preserved in very traditional urban and mosaic rural landscapes. Two large urban centres lie close to the lake – a little more distant Podgorica from the Montenegrin side and Shkodër at the very shore of the lake on Albanian side. More than 80% of the proposed SPA is protected as a National Park since 1983. The main unprotected area is a mosaic traditional landscape off the Northern shores of the lake.

QUALITY AND ORNITHOLOGICAL IMPORTANCE

Along with Ulcinj Salina Skadar Lake is the best known area in terms of bird diversity in Montenegro and the most important sites for breeding and wintering waterbirds in the country. Lying close to the Montenegro's capital and with available basic capacities for research and monitoring within the National Parks of Montenegro administration, this area was always a subject of research at least for a selected number of species and during specific periods of time (i.e. breeding, wintering periods). Skadar Lake is important for birds throughout the year: as a breeding area (often the only one in the country) for rare and threatened species, as a wintering area for up to 250.000 waterbirds and as one of the major migration hubs of the Adriatic Flyway for the birds coming from the Adriatic Sea and going towards the planes of Pannonia or vice versa. The most important areas in terms of breeding are Crni žar, Pančeva oka and Pjavnik areas, all located in the North-Eastern part of the Montenegrin side of the lake. These are highly eutrophicated and hardly penetrable boggy areas where willows grow from small peat islands and are exchanged with shallow pools and reed beds. In this area majority of colonial waterbird species breed in one or more (depending on year and species) heronries. All the breeding heron and egret species, ibises and both cormorants nest in these three sites. Pančeva oka is the most famous and constant site for the breeding of Dalmatian Pelicans *Pelecanus crispus*. Since 2010 the colony is assisted with floating rafts and the number of breeding pairs, the nesting success and the overall number of individuals at the lake is steadily growing since then. Other, non-colonial waterbirds, like ducks, Little Bitterns *Ixobrychus minutus*, Common Kingfishers *Alcedo atthis*, Marsh Harriers *Circus aeroginosus*, Whiskered Terns *Chlidonias hybridus* and many others are scattered more or less evenly over the overgrown Northern shores of the lake, while only few pairs of grebes, coots, and similar breed along the almost bare Southern lake shore. Similarly also wintering birds concentrate either along the Northern shore or at the open surface of the central part of the lake, while Southern shores remain relatively void due to the scarcity of food and shelter. During the migration period shorebirds like Northern Lapwings *Vanellus vanellus*, Wood Sandpipers *Tringa glareola* and Ruffs *Calidris pugnax* use floating islands near Crni žar or flooded meadows at the mouth of Morača river. The mosaic agricultural landscape of Donja Zeta at the Northern shore of the lake is a breeding area of lowland woodpecker species, namely Syrian *Dendrocopos syriacus*, Great-spotted *D. major*, Lesser-spotted *Dryobates minor* and Green Woodpeckers *Picus viridis*, Nightingales *Luscinia megarhyncha*, Cetti's Warblers *Cettia cetti*, Lesser-grey Shrikes *Lanius minor* and Levant Sparrowhawks *Accipiter brevipes* to name a few. The rugged rocky shores of South, Western and North-Western coasts are inhabited by significant population of raptors: Short-toed Snake Eagles *Circaetus gallicus*, European Honey Buzzards *Pernis apivorus*, a pair of Golden Eagles *Aquila chrysaetos* and high density of Eagle *Bubo bubo*, Scops *Otus scops* and Little Owls *Athene noctua*.

CRITERIA SPECIES	CRITERION	THRESHOLD	POPULATION ESTIMATE			
			MIN	MAX	UNIT	SEASON
Aythya ferina	C1, C2	60 i, 8.000 i	10	55	i	W
Aythya nyroca	C1, C6	20 p, 5 p	50	80	p	B
Aythya nyroca	C1, C2	60 i, 500 i,	1.035		i	W
Podiceps nigricollis	C2	2.100 i	3	5	i	W
Streptopelia turtur	C1	20 p	164	329	p	B
Fulica atra	C3	25.000 i	50	100	i	W
Plegadis falcinellus	C6	Top 5 sites (1.)	60	80	p	B
Botaurus stellaris						
Ixobrychus minutus	C6	Top 5 sites (1.)	40	80	p	B
Nyctycorax nyctycorax	C6	Top 5 sites (2.)	15	20	p	B
Ardeola ralloides	C6	Top 5 sites (1.)	80	120	p	B
Egretta garzetta	C6	Top 5 sites (2.)	80	120	p	B
Ardea alba	C2, C6	470 i, Top 5 sites (1.)	363	600	i	W
Ardea purpurea	C6	Top 5 sites (1.)	5	10	p	B
Pelecanus crispus	C1, C6	10 p, Top 5 sites (1.)	50		p	B
Pelecanus crispus	C2	65 i		241	i	R
Mycrocarbo pygmaeus	C6	Top 5 sites (1.)	2.92	3.92	p	B
Mycrocarbo pygmaeus	C2	290 i		11.8	i	W
Phalacrocorax carbo	C3	4.000 i	15	19	i	W
Vanellus vanellus	C1	60 i		1.1	i	M, W
Calidris pugnax	C1	60 i	hundreds		i	M
Chlidonias hybridus	C2, C6	1.000 i, Top 5 sites (1.)	1.1	1.3	p	B
Circus aeroginosus	C6	Top 5 sites (1.)	20	30	p	B
Accipiter brevipes	C6	Top 5 sites (3.)	15	20	p	B
Alcedo atthis	C6	Top 5 sites (1.)	30	50	p	B
Dendrocopos syriacus	C6	Top 5 sites (2.)	50	100	p	R
Lanius minor	C6	Top 5 sites (2.)	15	20	p	B
Anthus pratensis	C1	90 i	hundreds		i	W
Waterbirds TOTAL	C4	20.000 i	50	250	i	W

THREATS, PRESSURES AND ACTIVITIES WITH IMPACTS ON THE SITE

Although over 80% of the area was declared as a National Park already in 1983, Skadar Lake is threatened by a number of threats that slowly but persistently change the very natural and traditional character of this spectacular lake. Among most obvious direct threats are unsustainable urban developments, increased human pressure around touristic sites, causing disturbance, solid and liquid waste pollution and other cumulative effects on environment and biodiversity. Other direct problems are illegal fishing and hunting that are still relatively common and widespread. Disturbance of birds in breeding colonies has been largely overcome due to a set of direct conservation measures, but boating is not well regulated and controlled and regularly causes disturbance to wintering water birds and birds nesting outside the largest colonies. Among indirect threats the most obvious are hydro-power development plans on Morača River that is the main source of water for Skadar Lake. It is presumed that, if built, the dams on Morača River would cause ecological changes on Skadar Lake, and the effects on breeding birds, but also other animals and plants are completely unknown. Highly toxic waste waters

Great White Egrets *Ardea alba*, @P.Sack

(red mud) basins of the abandoned aluminium factory (Kombinat aluminiuma Podgorica-KAP) pose a constant treat not only to the area of Gornja Zeta and lower stream of Morača River, but to the whole Skadar Lake water basin. Pollution of the soil from aerial dispersal of toxic elements from KAP basins, pesticides and fertilizers from agriculture in Zeta area is a problem for Northern shores of the lake – Donja Zeta area.

CONSERVATION MEASURE RECOMMENDATIONS

Sustainable and nature-oriented responsible urban planning and careful management of habitat use of the area. Respecting the natural and urban heritage of the area and respecting the requirements of the spatial planning projects according to the relevant level of protection (National Park), inclusion of cumulative and lateral effects. Efficient control of illegal activities by enforcing the warden service. Efficient management and remediation of the waste water basins of the KAP. Hydropower development on Morača and other rivers that contribute to Skadar Lake should be banned or a subject of extremely cautious assessment and geographical location.

@B.Rubinić

ŠEKULAR, MOKRA, CMILJEVICA

AREA	*31.868 ha*	
SPA CRITERIA	*C1, C6*	
SITE CENTRE LOCATION	*42°70'70.30'' N*	*19°95'72.23'' E*
LAND COVER, LAND USE, HABITATS	*coniferous forest*	*23%*
	transitional woodland/shrub	*21%*
	broad-leaved forest	*21%*
	mixed forest	*11%*
	natural grassland	*11%*
	agriculture, natural areas	*9%*
	sparsely vegetated areas	*2%*
	pastures	*1%*
	bare rock	*1%*
PROTECTION STATUS (HA, %)	/	
ADMINISTRATIVE REGIONS	*Berane, Plav, Andrijevica*	

GENERAL SITE CHARACTER

Mountains of Mokra, Šekular, Cmiljevica and Čakor are a group of relatively low lying foothills of Prokletije Mountains in the North-Eastern chain of this large mountain group. Although the highest peak of the group is 2.112 m high Vaganica, the majority of ridges and mountain plateaus lie at altitudes between 1.500 and 1.900 m a.s.l. This is a rugged and diverse mountain chain, broken by numerous streams and valleys, mountain ridges and steep slopes into a brain shaped geography of steep hills and impenetrable gorges, but bathed rounded peaks with mild and hospitable pastures and herdsman's huts areas. More than two thirds of the area are covered with different types of forests. From alluvial Common Alder *Alnus glutinosa*, White Willow *Salix alba* and Common Aspen *Populus tremula* stands at the valley-bottoms of numerous mountain streams, thermophile Turkey Quercus cerris and other oak forests on southern slopes, to Dinaric beech forests *Omphalodo-Fagetum dinaricum* and high mountan boreal forests with prevailing Norway Spruces *Picea abies* and Macedonian Pines *Pinus peuce*. The area lies in North-Eastern Montenegro at the border with Kosovo and a few permanent settlements can only be found in the bottoms of valleys, while the majority of the area is used for traditional grazing only in summer, when people stay in traditional mountain hersmen's huts (katuni).

Spotted Nutcracker *Nucifraga caryocatactes*, @U.Paal

QUALITY AND ORNITHOLOGICAL IMPORTANCE

This area has a range of habitats among which in terms of size and ornithological values the most important are boreal coniferous and mixed forests. Due to their overall size and generally relatively preserved state these forests host significant populations of typical boreal bird species. The area is among most important sites in the country for basically all boreal Annex I species: namely Capercaillie *Tetrao urogallus*, Hazel Grouse *Bonasa bonasia*, Three-toed Woodpecker *Picoides tridactylus*, Boreal *Aegolius funereus* and Pygmy Owl *Glaucidium passerinum* and most probably also Black *Dryocopus martius* and Grey-headed Woodpeckers *Picus canus*. The later, in combination with White-backed *Dendrocopos leucotos* and Middle-spotted Woodpeckers *Leiopicus medius* is more characteristic for low lying mixed and broadleaved forests. On the other hand the high-lying rocky grasslands and alpine pastures host an important population of Rock Partridges *Alectoris graeca* and Rufous-tailed Rock Thrushes *Monticola saxatilis*, to name only a few birds of the rocky habitats.

CRITERIA SPECIES	CRITERION	THRESHOLD	POPULATION ESTIMATE			
			MIN	MAX	UNIT	SEASON
Alectoris graeca	C1	40 pairs	100	200	p	R
Bonasa bonasia	C6	Top 5 sites (5.)	145	290	p	R
Tetrao urogallus	C6	Top 5 sites (4.)	45	60	p	R
Glaucidium passerinum	C6	Top 5 sites (2.)	59	119	p	R
Aegolius funereus	C6	Top 5 sites (4.)	28	55	p	B
Picoides tridactylus	C6	Top 5 sites (2.)	187	375	p	R

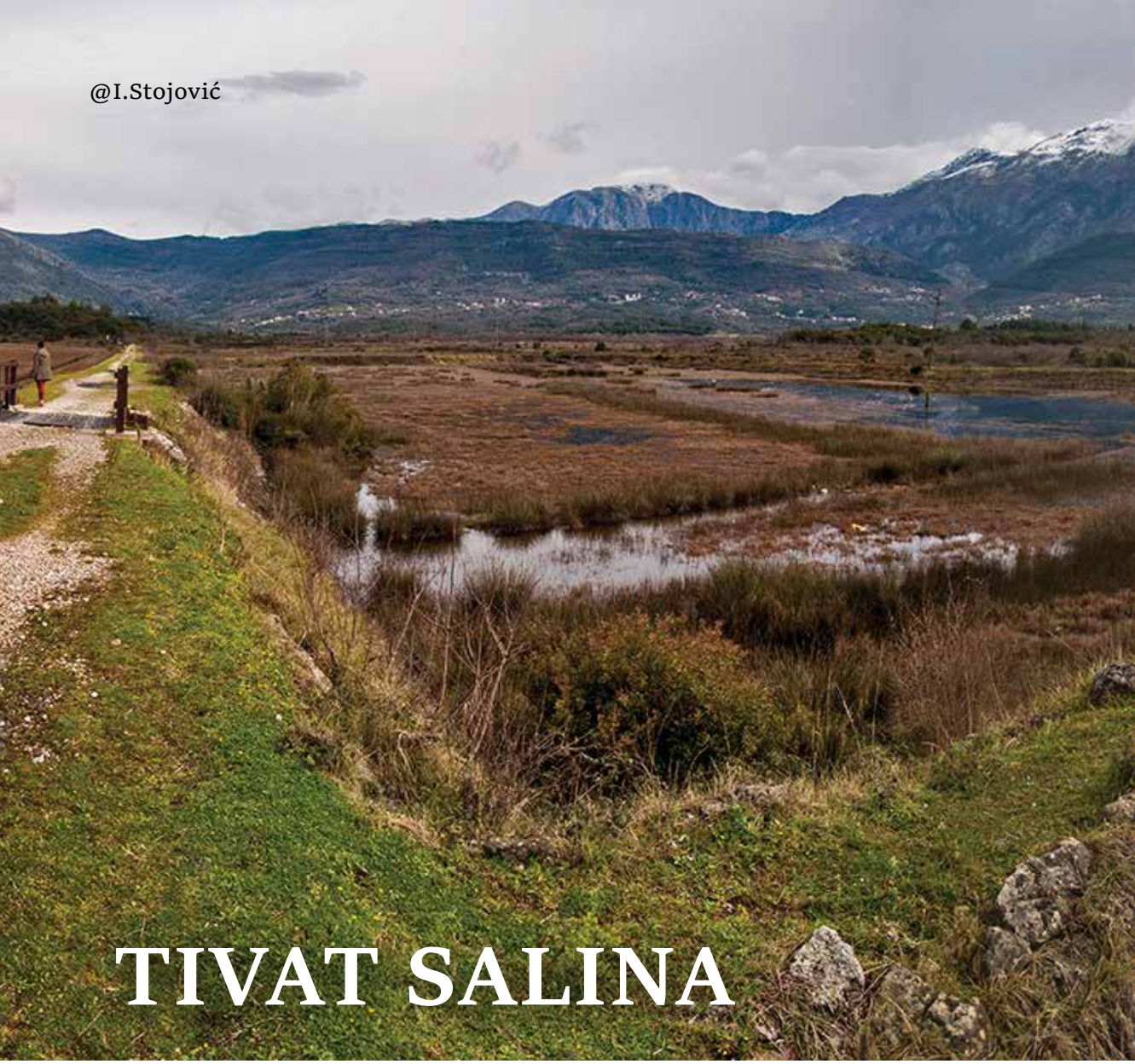

@M.Šoškić

THREATS, PRESSURES AND ACTIVITIES WITH IMPACTS ON THE SITE

Main threat of this area is unsustainable logging in some places, especially uncontrolled and irrational cutting of the last primeval and old-growth forest remains in this part of Montenegro. Few areas in the area, especially some traditional areas with herdsmen's huts (i.e areas of Čakor, Cmiljevica and Mokra) are and can be a subject of continuous unplanned urbanisation, while disturbance by 4x4 vehicles can pose threat to some species of birds and other animals. Hydropower construction of mini-hydro power-plants is a real threat and that not only harm the natural course of little rivers and streams of this area, but also inevitably expose previously inaccessible forest patches to erosion and logging. Land abandonment is an issue especially in higher areas, where pastures are being continuously overgrown with succession of scrubs and trees, making it less attractive for Rock Partridges and other species of rocky landscapes.

CONSERVATION MEASURE RECOMMENDATIONS

Logging and opening of new logging areas should be banned in the areas with primeval and old-growth forests and carefully controlled in the surrounding buffer areas. Forest reserves should be designated in the most valuable sites. Hydropower development should be banned or a subject of extremely cautious assessment and geographical location. Encouraging of alternative sustainable livelihoods that would help maintaining mountainous pastures and traditional alpine herding. The use of 4x4 vehicles outside of prescribed areas within the network of existing roads should be banned. Strict control over illegal poisoning and persecution of violators.



@I.Stojović

TIVAT SALINA

AREA	*127 ha*	
SPA CRITERIA	*C1, C6*	
SITE CENTRE LOCATION	*42°39'57.18'' N*	*18°71'21.64'' E*
LAND COVER, LAND USE, HABITATS	*salt marshes*	*77%*
	transitional woodland/shrub	*11%*
	sea and ocean	*9%*
	agriculture, natural areas	*1%*
	sclerophyllous vegetation	*1%*
PROTECTION STATUS (HA, %)	*Ramsar area, Special Nature Reserve Tivatska solila 150 ha (100%)*	
ADMINISTRATIVE REGIONS	*Tivat*	

GENERAL SITE CHARACTER

Tivat Salina is one of the two salt-pans on the Montenegrin part of the Adriatic coast. Known also as Tivat(ska) solila it is located in the Tivat Bay, a shallow part of larger of Boka Kotorska (bay), and covers a small area of about 150 ha. About one half of the Salina belongs to mud flats with halophyte vegetation and dikes that are up to 15 cm high, filled with water from the sea. The other half of the area consists of narrow basins and canals with mesophilic vegetation. These two units with drastically different habitats and flora are separated from each other by their entire length with a 2 to 3 meters high dike. Although in 1950s the construction of salt-pans and the plans for salt production were envisaged in this area, and the crystallization pools, channel and embankment systems have already been built, the salt production never occurred. Pools of the western part of the salina get filled with water only during the high tides. The channel system in the eastern part drains the surrounding areas and receives water from the river Široka which comes from the slopes of Vrmac and the river Kolžun that drains the area of Gornji Grbalj. Water in the canals is freshwater and is saturated with the wastewaters of the industry in Grbelj.

On the salt grows halofite vegetation from orders of Glassworts *Salicornietea* and Sea-lavenders *Limonietela*, as well as the communities of Sea Rush *Juncetalia maritime* and some reed beds *Phragmitetalia*. Due to the rarity of this type of habitat in Montenegro, the halophyte vegetation and the entire area of the salt pan represents a high ecological value.

QUALITY AND ORNITHOLOGICAL IMPORTANCE

Shallow salt and brackish water rich in fish, and the muddy bottom with rich benthic invertebrates make salina attractive to birds. Although contaminated, fresh water in the eastern part of the site is a habitat for amphibians and reptiles, which are also a food source for birds. Inactive salina makes the western half of the area almost dry in the summer months, which makes the development of benthos and vegetation more difficult. In winter Tivat Salina depends solely on the precipitation that fills channels of the eastern part. Due to the small size of the site not many species of water birds breed in Tivat Salina, and also the numbers of wintering and migrating (water)birds are not closely as spectacular as in 10-x larger Ulcinj Salina. Still, majority of egret, heron, duck, shorebird, gull and tern species occurring in Montenegro have been observed in the area, some of them also regularly reaching significant numbers. Different ducks, especially European Wigeons *Mareca penelope* and Common Teals *Anas crecca* winter in the shallow sea water in the front of salina, together with Common Coots *Fulica atra*, Black-headed Gulls *Croicocephalus ridibundus*, Sandwich Terns *Thalasseus sandvicensis* and occasional Pygmy Cormorants *Mycrocarbo pygmaeus*. Few Common Kingfishers *Alcedo atthis* fish in salina's channels along with Little Egrets *Egretta garzetta*, while the mudflats are always filled with small flocks of different Sandpipers *Tringa spp.*, *Calidris spp.*

CRITERIA SPECIES	CRITERION	THRESHOLD	POPULATION ESTIMATE			
			MIN	MAX	UNIT	SEASON
Aythya ferina	C1	60 i		200	i	W
Grus grus	C6	Top 5 sites (3.)	140		i	M
Himantopus himantopus	C6	Top 5 sites (3.)		56	i	M
Limosa limosa	C1	60 i		350	i	M

THREATS, PRESSURES AND ACTIVITIES WITH IMPACTS ON THE SITE

Tivat Salina is a small area that was under threat until 2008 when it was put under national protection as a Special Nature Reserve, and additionally recognized as Ramsar wetland of international importance in 2014. Currently they are managed by Public Enterprise for Coastal Zone Management (J.P. Morsko dobro). Occasionally rare cases of poaching still occur in the area.

CONSERVATION MEASURE RECOMMENDATIONS

Management plan for Tivat Salina is in place and the site is managed by local managing authority.

@B.Rubinić

ULCINJ SALINA

AREA	*1.450 ha*	
SPA CRITERIA	*C1, C2, C3, C4, C6*	
SITE CENTRE LOCATION	*41°92'23.89'' N*	*19°30'00.97'' E*
LAND COVER, LAND USE, HABITATS	*salinas*	*98%*
	inland marshes	*1%*
	pastures	*<1%*
	agriculture, natural areas	*<1%*
	transitional woodland/shrub	*<1%*
	complex cultivation patterns	*<1%*
PROTECTION STATUS (HA, %)	*Ulcinj Salina Nature Park 1.450 ha (100%)*	
ADMINISTRATIVE REGIONS	*Ulcinj*	

GENERAL SITE CHARACTER

Ulcinj Salina is situated on the southeastern coast of Adriatic Sea, which also represents the utmost southeast point of Montenegro. The salina is the largest of its kind in the Adriatic Sea and is located on the territory of Municipality of Ulcinj, near to the state border with Albania and is in wider sense ecologically and geographically a part of the much larger (ca. 1.000 km^2) Bojana Delta and Skadar Lake wetland complex. Salina is located only 1km from Ulcinj town, and the same distance from border with Albania. Ulcinj Salina is situated at the site of a former lagoon and wetland placed in the delta of river Bojana, Zogajsko blato (Zogaj or Bird marsh). This lagoon is separated from the sea by Velika Plaža, and from river Bojana by the natural river bank, in some places additionally consolidated by the artificial embankment against floods. The area is flooded by fine river deposits of organic origin and sand as inorganic component. As a result of the influence of the sea and existing salt production the soil has become alkaline. Huge amounts of remains of shells and snails can be found on the bottom of the Salina basins. Salina was built into a system of salt-pans in the 1930s, but even though the water regime and the ecology of the former lagoon Zogaj marsh was changed with the formation of Ulcinj salina, former central lagoon in Delta Bojana is preserved as a swamp. Surface of the swamp area of the Montenegrin part of Delta Bojana is kept almost unchanged for the last 100 years. The salt production in Ulcinj Salina went on for about 80 years, between 1934 and 2013, when the salt production company bancrupted and the salt production stopped.

Apart from halophytes and reed *Phragmition communis*, a community of meadows, grazing grounds and ruderal vegetation also holds importance. Rich halophyte community on Salina is important because there is only one more of its habitat in Montenegro - Tivat Salina near Tivat. The community of *Salicornietum herbaceae*, described in Ulcinj Salina can be found only in Montenegro.

First Act on Ulcinj Salina protection was accepted in 1984, when the Worker's Council of the salina prohibited any kind of hunting in the area of the salina. From 2004 Ulcinj Salina is a first private Nature park in Montenegro, but formal protection on national level was not established. Ulcinj Salina was recently finally proposed as a Nature Park after a long process of negotiations between government and the non-governmental sector. The designation is foreseen for 2019.

QUALITY AND ORNITHOLOGICAL IMPORTANCE

Ulcinj Salina is the most important wintering, nesting and feeding site for birds on the eastern coast of Adriatic Sea and a key stop-over site for bird migration on the Adriatic Flyway. Millions of birds fly over this area on their way from Europe to Africa and back. Between 13 and 24 thousands birds have been registered there in the last ten years in the period from November until end of March.

During some autumn and winter periods (from September - December) up to 2% of the global population of Dalmatian Pelican (*Pelecanus crispus*) use the Salina as a feeding and resting site. Same is the case with other 14 bird species with populations exceeding the threshold of 1% of regional or global population and additional three species closely approaching the 1% of regional or global population, nesting or using salina in certain period of the year (Ramsar criteria 1%).

For the period November-end of March within period 1999-2016, a maximum of 13-24 thousand waterbirds were registered in the salina at once. Turn-over numbers have not been put in account in this figures.

CRITERIA SPECIES	CRITERION	THRESHOLD	POPULATION ESTIMATE			
			MIN	MAX	UNIT	SEASON
Aythya ferina	C1	60 i		1.25	i	W
Aythya nyroca	C6	Top 5 sites (3.)	45		i	M
Phoenicopterus roseus	C2, C6	600 i, Top 5 sites (1.)	1.1	2.5	i	R
Grus grus	C6	Top 5 sites (3.)		632	i	M
Platalea leucorodia	C6	Top 5 sites (2.)		237	I	M
Plegadis falcinellus	C6	Top 5 sites (2.)		181	i	M
Nyctycorax nyctycorax	C6	Top 5 sites (4.)		95	i	M
Ardea alba	C2, C6	470 i, Top 5 sites (2.)		510	i	W
Egretta garzetta	C6	Top 5 sites (3.)	450	680	i	R
Pelecanus crispus	C1, C2, C6	30 i, 65 i, Top 5 sites (2.)	50	147	i	W
Mycrocarbo pygmaeus	C2, C6	290 i, Top 5 sites (3.)	300	639	i	R
Burhinus oedicnemus	C6	Top 5 sites (1.)	16	22	p	B
Recurvirostra avosetta	C6	Top 5 sites (2.)	40	101	I	M

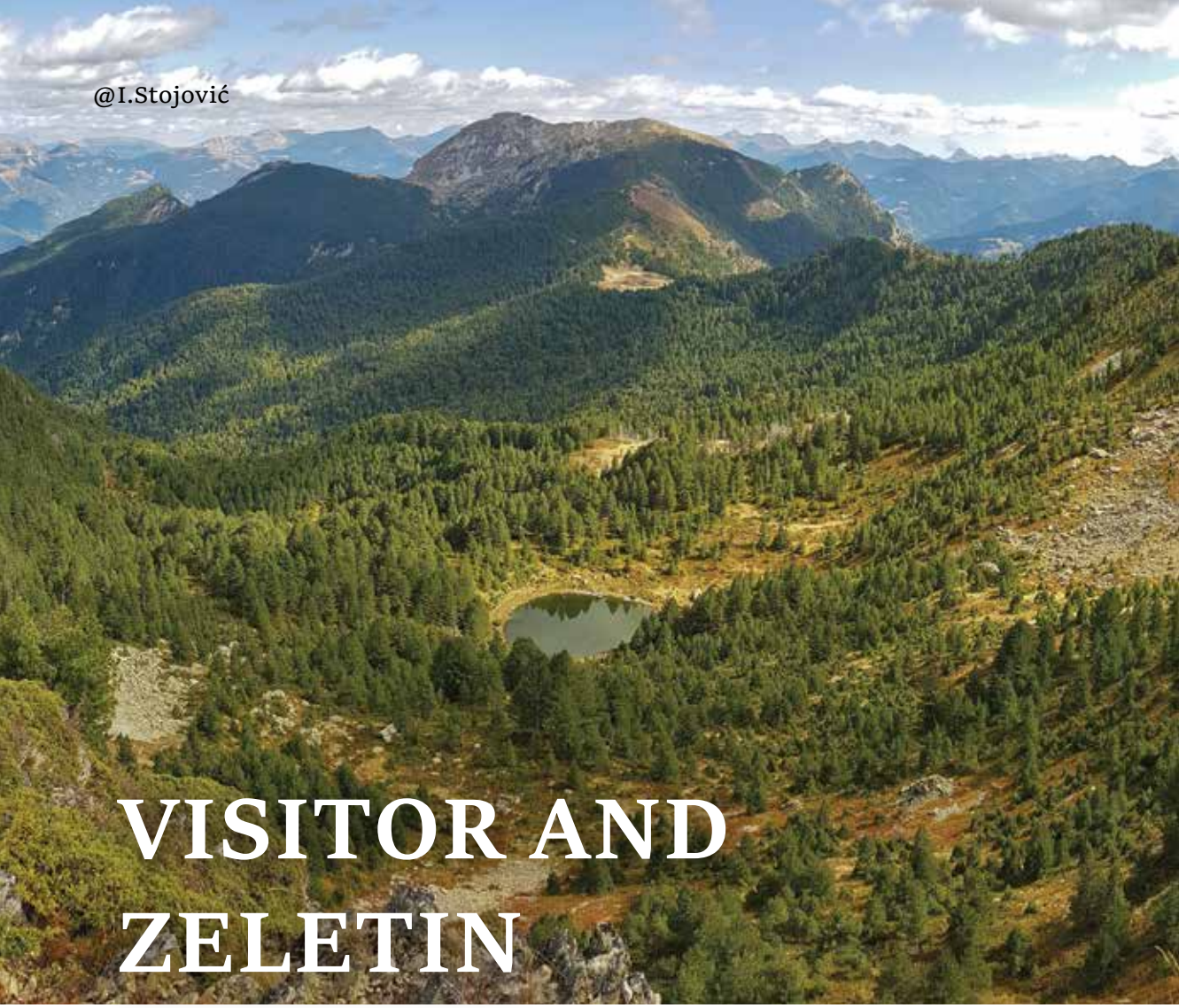
CRITERIA SPECIES	CRITERION	THRESHOLD	POPULATION ESTIMATE			
			MIN	MAX	UNIT	SEASON
Himantopus himantopus	C6	Top 5 sites (1.)	40	107	p	B
Pluvialis apricaria	C6	Top 5 sites (1.)	500	900	i	W
Charadrius alexandrinus	C6	Top 5 sites (1.)		127	p	B
Vanellus vanellus	C1	60 i		4.143	i	W
Vanellus vanellus	C6	Top 5 sites (1.)	6	8	p	B
Numenius arquata	C1	60 i		190	i	M
Limosa limosa	C1	60 i		3.423	i	M
Calidris pugnax	C1	60 i		2.6	i	M
Calidris ferruginea	C1	60 i		734	i	M
Calidris alpine	C3	5.000 i		10.503	i	W
Tringa erythropus	C3	850 i	1.5	2.249	i	M, W
Tringa glareola	C6	Top 5 sites (1.)	750	2	i	M
Glareola pratincula	C2, C6	230 i, Top 5 sites (1.)	170	190	p	B
Sternula albifrons	C6	Top 5 sites (1.)	90	150	p	B
Sterna hirundo	C6	Top 5 sites (1.)	5	80	p	B
Circus aeroginosus	C6	Top 5 sites (3.)		30	i	W
Coracias garrulus	C6	Top 5 sites (1.)	9	13	p	B
Motacilla flava						
Waterbirds	C4	20.000 i	13	24	i	W

THREATS, PRESSURES AND ACTIVITIES WITH IMPACTS ON THE SITE

Ulcinj Salina is an area, where long-term (>10 years) efforts for its efficient conservation take place. Although the site is expected to finally gain its recognition as one of the most important areas for birds in the country and in the whole Adriatic and become formally protected as Nature Park, the question of management and efficient control remains open. Main recent threats are land management abandonment that is causing conversion of the salt- and brackish-water habitats into freshwater ones¸ followed by illegal hunting and disturbance.

CONSERVATION MEASURE RECOMMENDATIONS

Designation as protected area on national (Nature Park) and international (Ramsar site) levels and efficient management and control.



@I.Stojović

VISITOR AND ZELETIN

AREA	*14.059 ha*	
SPA CRITERIA	*C1, C6*	
SITE CENTRE LOCATION	*42°63'69.35'' N*	*19°84'03.48'' E*
LAND COVER, LAND USE, HABITATS	*broad-leaved forest*	*44%*
	transitional woodland/shrub	*15%*
	mixed forest	*13%*
	agriculture, natural areas	*9%*
	sparsely vegetated areas	*7%*
	coniferous forest	*6%*
	natural grassland	*4%*
	bare rock	*2%*
PROTECTION STATUS (HA, %)	/	
ADMINISTRATIVE REGIONS	*Plav, Andrijevica*	

GENERAL SITE CHARACTER

Visitor mountain group is geographically relatively isolated and well defined high mountain massif at the extreme south-eastern part of the Dinaric mountain chain, twisted between Komovi Mountains and much larger Prokletije Mountains. This massif is prominent, standing some 1.300 m high from the Lim Valley at around 900 m a.s.l. to the top of the Plana (Bandera) peak that reaches the height of 2.211 m. From South, East and North-East this triangular shaped massif is divided by the bow of Lim river, and from West by smaller Kutska River. The Visitor group is a crown shaped massif, composed by larger Visitor and Zeletin Mountain ridges and smaller Greben and Lipovica ridges. Although limestone covered above the metamorphic slates and sandstones, the general topography of these mountains is mild and round shaped, covered with extensive forests and high alpine pastures, locally rich with streams and surface water. The low-lying slopes are covered with old-growth Dinaric-beech forests *Omphalodo*-Fagetum, that gradually become mixed with different species of conifers with height. In middle elevations those are Norway Spruce *Picea abies*, Silver Fir *Abies alba*, and Scots Pine *Pinus sylvestris*, while in higher altitudes those are unique mixed stands of Bosnian *P. heldreichii* and Macedonian Pines *P. peuce* and Dwarf Pines P. mugo on the highest areas. Pastures and natural grasslands, combined with rocky outcrops and cliff-edges stretch over highest areas of exposed ridges, where also few herdsmen's huts remain active.

Middle-spotted Woodpecker *Leiopicus medius*, @M.Šoškić

QUALITY AND ORNITHOLOGICAL IMPORTANCE

Like surrounding Prokletije Mountains, Šekular, Mokra and Cmiljevica SPA, but also Bjelasica and Komovi Mountains, also Visitor and Zeletin Mountains dominate with boreal habitats, at least in higher parts. Boreal species of woodpeckers: Black *Dryocopus martius*, Three-toed *Picoides tridactylus* of higher, more coniferous and mixed forests become associated with more broadleaved species like White-backed *Dendrocopos leucotos*, Grey-headed *Picus canus* and Middle-spotted Woodpeckers *Leiopicus medius* that inhabit beech forests at middle and lower elevations. Hazel Grouse *Bonasa bonasia* and Capercaillies *Tetrao urogallus* are relatively abundant as well, while among boeal owls only Pygmy Owl *Glaucidium passerinum* has been recorded, while Boreal *Aegolius funereus* and Ural Owls *Strix uralensis* haven't been observed so far. Open rocky areas with pastures and alpine grasslands are home to a substantial population of Rock Partridges *Alectoris graeca*.

CRITERIA SPECIES	CRITERION	THRESHOLD	POPULATION ESTIMATE			
			MIN	MAX	UNIT	SEASON
Alectoris graeca	C1	40 pairs	50	115	p	R
Bonasa bonasia	C6	Top 5 sites (5.)	145	290	p	R
Glaucidium passerinum	C6	Top 5 sites (4.)	44	88	p	R
Dendrocopos leucotos	C6	Top 5 sites (4.)	140	281	p	R

THREATS, PRESSURES AND ACTIVITIES WITH IMPACTS ON THE SITE

Main threat of this area is unsustainable logging in some places, especially uncontrolled and irrational cutting of the last primeval and old-growth forest remains in this part of Montenegro. Few areas in the area, especially some traditional areas with herdsmen's huts are and can be a subject of unplanned urbanisation. Hydropower construction of mini-hydro power-plants is a real threat and that not only harm the natural course of little rivers and streams of this area, but also inevitably expose previously inaccessible forest patches to erosion and logging. Land abandonment is an issue especially in higher areas, where pastures are being continuously overgrown with succession of scrubs and trees, making it less attractive for Rock Partridges and other species of rocky landscapes. Illegal hunting of Capercaillies, Rock Partridges and Hazel Grouse is probably taking place at least to the limited extent.

CONSERVATION MEASURE RECOMMENDATIONS

Logging and opening of new logging areas should be banned in the areas with primeval and old-growth forests and carefully controlled in the surrounding buffer areas. Forest reserves should be designated in the most valuable sites. Hydropower development should be banned or a subject of extremely cautious assessment and geographical location. Encouraging of alternative sustainable livelihoods that would help maintaining mountainous pastures and traditional alpine herding. Stricter control and enforcement over illegal hunting and more effective persecution of violators.

THE CONTRIBUTION OF MONTENEGRO TO THE EUROPEAN UNION'S SPA NETWORK

Montenegro lies within the global biodiversity hotspot of the Mediterranean Basin (Groombridge & Jenkins 2002, Ieronymidou et al. 2015). Despite its small surface area of 13.812 km² the country encompasses a rich array of geologic formations, climatic zones, and of natural and cultural landscapes. Following to its geographic position in the west of the Balkan Peninsular and its vertical extension from sea-level at the shores of the Adriatic Sea up to more than 2500 m a.s.l. in the Durmitor Massif and Prokletije Mountains, it harbours a particularly high habitat diversity. From alpine grasslands on the higher mountain ridges, together with a vast and extraordinarily well preserved belt of mountain forests in the north and west of the country, to dry lowland grasslands, sub-Mediterranean evergreen forests, and extensive coastal and marine ecosystems, Montenegro encompasses all major habitats of the Western Balkans and Eastern Europe (cf. Ministry of Spatial Planning and Environment 2010).

The karst areas of the Dinaric Alps and the mountains of the central Balkans are further home to many endemic plants, amphibians, freshwater fishes and invertebrates (e.g., Griffiths et al. 2004). However, contrary to other vertebrates, birds are able to perform short-term, long-distance movements. In the Mediterranean, endemic bird species are therefore restricted only to large off-shore islands (Blondel et al. 2014).

Montenegro harbours a particularly high number of breeding bird species in a comparably small area. With 230 species, the numbers for Albania and Montenegro are higher than the breeding bird numbers of most neighbouring and considerably larger countries, like Macedonia (210), Bosnia-Herzegovina (218) and Croatia (224 species). Together with extensive coastal floodplains, in the Dinaric Alps, Albania and Montenegro share vast areas of high-mountain habitats. Hence, following to the country's high habitat diversity, the amount of breeding bird species of Montenegro closely resembles or is even larger than that of Portugal (207) and Italy (234 species), both much larger countries with surface areas beyond 85.000 km² (cf. Tab. 1).

A considerable portion of the forest and mountain areas of Montenegro are still preserved in an almost primeval state. Similarly, extensive wetland habitats remain in near natural condition, while following to traditional land-use systems the country's rural hinterlands are characterized by structurally and biologically highly diverse cultural landscapes. As a consequence of the diversity and good conservation status of different habitat types, 45 species of Annex I of the EU's Birds Directive and 26 species, listed by BirdLife International (2017) as Species of

European Conservation Concern, breeding in Montenegro qualified for the nomination of no less than 33 potential SPAs. Although population thresholds for SPA identification following criterion C6 vary between countries, for Montenegro numbers of breeding bird species which trigger SPA nomination are comparable only to that of much larger countries, like Romania and Bulgaria (Tab. 1). With 7,415 km² around 54% of the country's territory lies inside potential SPAs, which is the highest proportion for the countries of the Mediterranean region. Hence, as illustrated in Fig. 1, in terms of surface area the contribution of Montenegro to the EU's Natura 2000 network will be disproportionally high.

Table 4: Surface area, number of breeding birds, numbers of breeding bird species relevant for IBA/SPA nomination as well as numbers and total surface area nominated as IBA/SPAs in Mediterranean countries. * without endemic species of Atlantic islands

COUNTRY	AREA (KM²)	BREED. SPECIES	IBAS	AREA IBAS (KM²)	GLOBALLY THREATENED	IBAs C1	IBAs C2, C6
Malta	320	26	5	3	1	0	4
Cyprus	9,250	79	16	1305	3	5	8
Montenegro	13,812	230	33	7415	5	23	45
Slovenia	20,256	207	14	3413	6	6	25
Macedonia	25,715	210	10	1907	11	7	7
Albania	28,750	230	15	903	10	9	5
Bosnia-Herzegovina	51,130	218	3	68	8	3	-
Croatia	56,540	224	23	7546	8	12	27
Serbia	88,361	238	35	7670	13	14	-
Portugal	89,000	207	34	9421	12*	11	26
Bulgaria	110,994	240	50	7002	14	30	58
Greece	132,000	251	196	34332	13	73	46
Romania	237,500	247	44	6557	17	24	47
Italy	301,302	234	192	46270	16	51	58
Spain	492,463	278	391	157689	21*	144	66
France	551,600	269	277	47248	19	32	55
Ukraine	603,700	263	102	20323	26	49	44
Turkey	779,452	302	97	29978	24	56	46

Based on recent assessments by BirdLife International (2017), the breeding populations of four Globally Threatened species reach C1 thresholds, i.e. Dalmatian Pelican Pelecanus crispus, Ferruginous Duck Aythya nyroca, Rock Partridge and European Turtle-dove. While the formerly larger, but currently heavily depleted breeding numbers of Eurasian

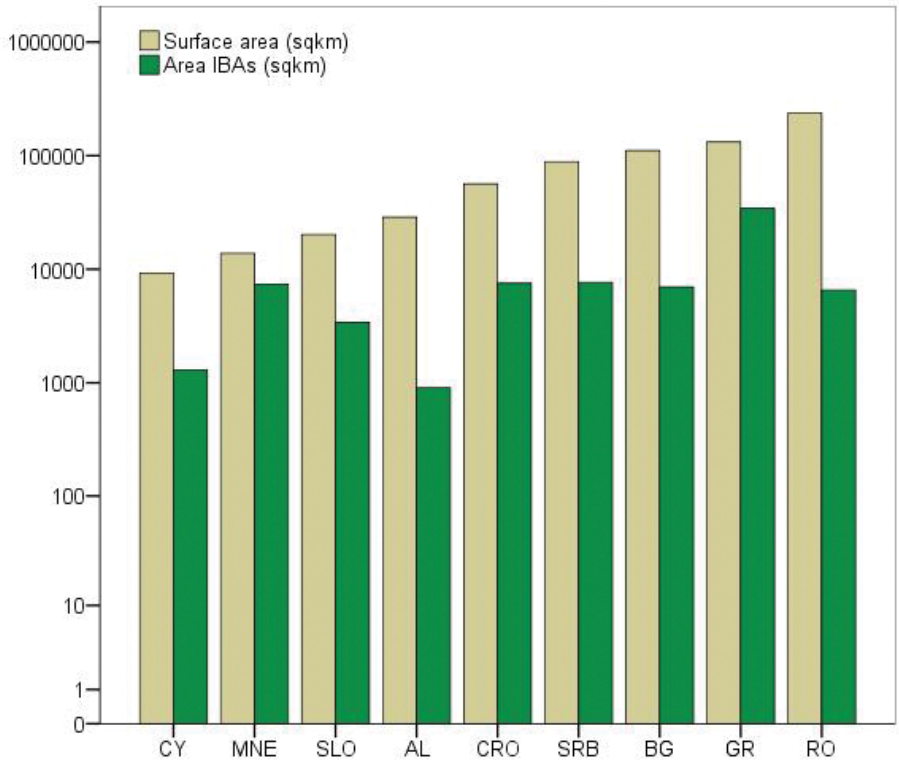


Figure 18: Total area and surface area of nominated IBAs (according to Heath & Evans 2000) for East Mediterranean countries.

Oystercatcher Haematopus ostralegus in the Bojana river delta, as well as the newly established small breeding population of Northern Lapwing Vanellus vanellus in the Ulcinj Salina, do not surpass the population thresholds. In all, the number of Globally Threatened species whose numbers trigger SPA identification is in proportion with area size and does not differ from the respective numbers in neighbouring countries (Tab. 1).

Criteria for SPA identification are generally based on thresholds of population size for species of high conservation concern. In Tab. 2 total population numbers of 42 breeding bird species for the nominated SPAs, are compared with their respective national and European populations. We further calculated overall populations for the Balkan Peninsular as overall breeding numbers per species for nine Balkan countries, including all ex-Yugoslavia countries (except Kosovo), Albania, Greece and Bulgaria. For an additional nine species, not listed in Tab. 2, no reliable population estimates for the nominated SPAs or of their respective national populations are available.

The breeding populations of almost all waterbirds which fulfil the national SPA selection criteria are concentrated in extensive freshwater habitats around Skadar Lake and in the riverine and coastal lowlands of the Bojana river delta, encompassing Ulcinj Salina. Together Skadar Lake and the Bojana Delta harbour significant populations of at least 20 waterbird species. Montenegro's SPA network will cover some of the most important breeding

places of colonially nesting waterbirds on the Balkan Peninsular, like Squacco Heron Ardeola ralloides and Little Egret Egretta garzetta, as well as some of the Balkan's most significant nesting sites of Eurasian Oystercatcher, Black-winged Stilt Himantopus himantopus, Kentish Plover Charadrius alexandrinus and Little Tern Sternula albifrons (Tab. 2).

The Skadar Lake further harbours the largest concentration of Pygmy Cormorant Microcarbo pygmaeus on the Balkan Peninsular. From 60% to almost 90% of the Balkan population of Pygmy Cormorant, i.e. 6% - 12% of its European population, breeds in the wider Skadar Lake/Bojana Delta ecosystem (Tab. 2). In addition, Skadar Lake is an important wintering site of the species.

According to current count data, the reed beds and marshlands in the Montenegrin part of the Skadar Lake further hold up to 2% of the European breeding population of Dalmatian Pelican and Whiskered Tern Chlidonias hybrida. Additionally, with up to 4% - 7% and 1% - 3% of their respective European population, the coastal swamps and sandy shores at the delta front of the Bojana River together with the mudflat habitats in the evaporation basins of the Ulcinj Salina, are the home of internationally important breeding populations of Baillon's Crake Zapornia pusilla and Collared Pratincole Glareola pratincola. For Collared Pratincole and many estuarine waterbirds, in particular Black-winged Stilt, Kentish Plover and Little Tern, the Bojana Delta with the Ulcinj Salina is the most important breeding site along the eastern coast of the Adriatic Sea and on the Western Balkans (Tab. 2).

The wider wetland complex of Skadar Lake and of the Bojana River corridor along the border between Albania and Montenegro, is also an important resting and wintering site for migratory waterbirds. In winter the Skadar Lake regularly harbours 40,000 – 80,000 waterbirds, with Common Coot Fulica atra, Great Cormorant Phalacrocorax carbo, Pygmy Cormorant, and Common Pochard Aythya ferina as dominant species. The respective numbers of waterbird populations in the Ulcinj Salina fluctuate between 9,000 – 19,000 birds in winter and from fewer than 2,000 up to more than 32,000 waterbirds during autumn and spring migration (Schneider-Jacoby et al. 2006, Stumberger et al. 2008).

Ground observations on visual bird migration on Ada Island additionally showed that the Bojana Delta is an important migration corridor for waterbirds, in particular ducks, some waders, and Little Hydrocoloeus minutus and Mediterranean Gull Larus melanocephalus. While Mediterranean Gull mainly follow the coast-line during their annual migrations between wintering sites and their breeding areas in the Black Sea and Caspian region, most ducks and waders enter the delta from the Adriatic Sea into the hinterlands of the Balkan Peninsular. Across 270 hour and 290 h of observations per year, 2013 – 2015, migration intensity fluctuated between 217 birds/h and 445 birds/h. Hence, the real numbers of waterbirds which cross the Bojana Delta during spring migration is estimated to surpass, at least, a several 100,000s of birds (Sackl et al. 2014, 2017).

Field surveys for the present assessment also allowed the first reliable population estimates for some farmland and forest birds. According to the near natural state of vast

Table 5: Comparison of total breeding populations in areas selected for SPA nomination and the respective Balkan and European populations for Globally Threatened and Birds of European Conservation Concern. Balkan populations are roughly estimated using data from BirdLife International (2017) and additional information from Ornitološko društvo Naše ptice.

BREEDING BIRD SPECIES		Criteria	pop SPA	pop Montenegro	% Montenegro	pop Balkan	% Balkan	Europ. pop	% Europ. pop.	Europ. pop. trend
Rock Partridge	*Alectoris graeca*	C1, C6	2.655 - 4.200	3.500-5.500	48% - 100%	28.200 - 44.900	8% - 20%	41.800 - 73.400	5% - 13%	Decreasing
Hazel Grouse	*Bonasa bonasia*	C6	1.340 - 2.680	3.000 - 6.000	22% - 89%	8.600 - 18.400	7% - 31%	1.480.000 - 2.920.000	<0,2%	Stable
Western Capercaillie	*Tetrao urogallus*	C6	575 - 775	810 - 1.065	54% - 96%	1540 - 2183	26% - 50%	666.000 - 1.060.000	0,1%	Increasing
Ferruginous Duck	*Aythya nyroca*	C1, C6	50 - 80	50 - 80	100%	2.200 - 4.200	1% - 4%	17.400 - 30.100	0,2% - 0,5%	Unknown
European Turtle-dove	*Streptopelia turtur*	C1, C6	945 - 1890	2.300 - 4.600	21% - 82%	37.600 - 431.900	0,2% - 5%	3.150.000 - 5.940.000	0,1%	Decreasing
Baillon's Crake	*Zapornia pusilla*	C6	0 - 70	0 - 70	100%	142 - 325	17% - 49%	980 - 1.400	4% - 7%	Unknown
Corncrake	*Crex crex*	C6	55 - 72	100 - 120	46% - 72%	4.900 - 8.900	0,6% - 2%	1.290.000 - 2.120.000	<'0,1%	Stable
Eurasian Spoonbill	*Platalea leucorodia*	C6	16 - 35	16 - 35	100%	496 - 755	2% - 7%	10.200 - 15.200	0,1 - 0,3%	Increasing
Glossy Ibis	*Plegadis falcinellus*	C6	60 - 80	60 - 80	100%	272 - 499	12% - 29%	28.300 - 37.700	0.2% - 0,3%	Increasing
Common Little Bittern	*Ixobrychus minutus*	C6	45 - 100	50 - 110	100%	6.600 - 12.300	0,4% - 2%	63.100 - 111.000	<0,2%	Stable
Black-crowned Night-heron	*Nycticorax nycticorax*	C6	58 - 67	58 - 67	100%	6.700 - 8.800	0,7% - 1%	60.000 - 86.100	0,1%	Decreasing
Squacco Heron	*Ardeola ralloides*	C6	159 - 224	159 - 224	100%	2.156 - 3.036	5% - 10%	15.000 - 25.900	0,6% - 2%	Stable
Purple Heron	*Ardea purpurea*	C6	5 - 10	10 - 20	100%	950 - 1.380	0,4% - 1%	31.600 - 46.000	<0,1%	Decreasing
Little Egret	*Egretta garzetta*	C6	284 - 401	289 - 406	100%	4.570 - 5.950	5% - 9%	66.700 - 84.800	0,3 - 0,6%	Decreasing
Dalmatian Pelican	*Pelecanus crispus*	C1, C6	50	50	100%	1.465 - 1.707	3%	3.000 - 3.600	1% - 2%	Fluctuating
Pygmy Cormorant	*Microcarbo pygmaeus*	C6	2.950 - 4.340	2.920 - 4.340	100%	4.300 - 5.000	59% - 87%	37.600 - 50.400	6% - 12%	Increasing
Eurasian Thick-knee	*Burhinus oedicnemus*	C6	36 - 52	35 - 55	66% - 95%	1.200 - 1.770	2% - 5%	53.400 - 88.200	<0,1%	Increasing
Eurasian Oystercatcher	*Haematopus ostralegus*	C1, C6	2 - 5	2 - 5	100%	67 - 115	2% - 8%	284.000 - 354.000	<0,1%	Decreasing
Black-winged Stilt	*Himantopus himantopus*	C6	45 - 130	45 - 130	± 100%	1.375 - 3.982	1% - 8%	53.900 - 75.700	0,1% - 0,2%	Stable
Kentish Plover	*Charadrius alexandrinus*	C6	90 -140	75 - 140	± 100%	1.454 - 2.796	3% - 9%	21.500 - 34.800	0,3% - 0,5%	Decreasing
Northern Lapwing	*Vanellus vanellus*	C1, C6	6 - 8	6 - 8	± 100%	5.370 - 11.500	0,1%	1.590.000 - 2.580.000	<0,1%	Decreasing
Collared Pratincole	*Glareola pratincola*	C6	175 - 200	180 - 195	100%	870 - 1530	11% - 23%	7.800 - 14.900	1% - 3%	Decreasing
Little Tern	*Sternula albifrons*	C6	90 - 150	90 - 150	100%	2220 - 3530	3% - 7%	36.000 - 53.000	0,2% - 0,4%	Unknown
Whiskered Tern	*Chlidonias hybrida*	C6	1.100 - 1.300	1.100 - 1.300	100%	3950 - 5340	11% - 30%	66.300 - 108.000	0,6% - 2%	Increasing
Common Tern	*Sterna hirundo*	C6	50 - 180	50 - 180	?	2240 - 3970	0,1% - 4%	316.000 - 605.000	<0,1%	Increasing

Eurasian Pygmy-owl	*Glaucidium passerinum*	C6	362 - 726	500 - 1.000	36% - 73%	480 - 970	38% - 75%	99.600 - 195.000	0,2% - 0,7%	Stable
Boreal Owl	*Aegolius funereus*	C6	455 - 911	600 - 1.200	38% - 76%	1370 - 2500	18% - 67%	90.900 - 309.000	0,1% - 1%	Fluctuating
Eurasian Eagle-owl	*Bubo bubo*	C6	63 - 90	240 - 460	14% - 38%	3290 - 5330	1% - 3%	18.500 - 30.300	0,2% - 0,5%	Increasing
Golden Eagle	*Aquila chrysaetos*	C6	22 - 31	41 - 67	33% - 76%	610 - 950	2% - 5%	9.300 - 12.300	0,2% - 0,3%	Increasing
Western Marsh-harrier	*Circus aeruginosus*	C6	21 - 31	20 - 40	53% - 78%	360 - 880	2% - 9%	99.300 - 184.00	<0,1%	Increasing
Levant Sparrowhawk	*Accipiter brevipes*	C6	61 - 110	100 - 180	34% - 61%	1320 - 2760	2% - 8%	3.500 - 6.900	0,9% - 3%	Unknown
European Roller	*Coracias garrulus*	C6	6 - 17	10 - 30	± 100%	2600 - 9060	0,1% - 0,7%	37.700 - 79.200	<0,1%	Decreasing
Common Kingfisher	*Alcedo atthis*	C6	94 - 160	140 - 200	47% - 80%	6310 - 12260	0,8% - 3%	97.500 - 167.000	0,1% - 0,2%	Decreasing
Three-toed Woodpecker	*Picoides tridactylus*	C6	792 - 1.585	1.300 - 2.600	31% - 61%	1.900 - 3.700	22% - 85%	598.000 - 1.450.000	0,1% - 0,3%	Unknown
White-backed Woodpecker	*Dendrocopos leucotos*	C6	804 - 1.610	2.400 - 4.800	17% - 67%	5.300 - 12.100	7% - 30%	232.000 - 586.000	0,1% - 0,7%	Stable
Lesser Grey Shrike	*Lanius minor*	C6	75 - 120	180 - 360	21% - 67%	23.500 - 38.700	0,2% - 0,5%	331.000 - 896.000	<0,1%	Decreasing
Calandra Lark	*Melanocorypha calandra*	C6	70 - 80	70 - 80	± 100%	66.300 - 120.000	0,1%	10.300.000 - 21.900.000	<0,1%	Decreasing
Greater Short-toed Lark	*Calandrella brachy-dactyla*	C6	150 - 170	170 - 200	75% - 100%	96.400 - 150.000	0,1% - 0,2%	4.730.000 - 9.050.000	<0,1%	Unknown
Wood Lark	*Lullula arborea*	C6	1.540 - 3.083	5.000 - 10.000	15% - 62%	81.300 - 179.000	1% - 4%	1.890.000 - 3.890.000	<0,1% - 0,2%	Increasing
Barred Warbler	*Sylvia nisoria*	C6	1.811 - 3.611	6.250 - 12.500	15% - 58%	21800 - 34.100	8% - 23%	506.000 - 968.000	0,2% - 0,7%	Unknown
Tawny Pipit	*Anthus campestris*	C6	125 - 508	730 - 1.460	9% - 70%	37.300 - 87.100	0,1% - 1%	909.000 - 1.720.000	<0,1%	Unknown
Ortolan Bunting	*Emberiza hortulana*	C6	150 - 385	150 - 400	38% - 96%	89.900 - 244.000	0,1% - 0.4%	3.330.000 - 7.070.000	<0,1%	Decreasing

@B.Rubinić

mountain and forest habitats, the results testify the significant contribution of Montenegro for the protection of forest bird populations in the Balkans and in Europe. The country for example, harbours more than 50% of the breeding population of Western Capercaillie, of Boreal Owl Aegolius funereus, Eurasian Pygmy-owl Glaucidium passerinum and Three-toed Woodpecker Picoides tridactylus in the Balkan Peninsular (Tab. 2). Montenegro further hosts, despite its small surface area, large and considerably viable populations of 5,300 – 12,100 bp of White-backed Woodpecker Dendrocopos leucotos and 28,200 – 44,900 bp of Rock Partridge, while farmland species like European Turtle-dove, Wood Lark, Barred Warbler and Corncrake surpass the 1% threshold of their Balkan populations (Tab. 2). The same holds, despite regular poisoning and illegal shooting, for large raptors, like Golden Eagle and Eurasian Eagle Owl, and, with up to 8% of its Balkan population, for Levant Sparrowhawk whose European distribution is largely restricted to the Balkan Peninsular and the Caspian and Black Sea regions (Tab. 2).

On the European level, the breeding numbers of 9 (or 22%) of the 45 breeding bird species that were evaluated for SPA nomination, reach the 1% threshold of their respective European breeding populations. Accordingly, Montenegro's network of SPAs will be particularly important for the preservation of Pygmy Cormorant, Rock Partridge, Baillon's Crake, Collared Pratincole, Levant Sparrowhawk, Squacco Heron, Dalmatian Pelican, Whiskered Tern and Boreal Owl within the territory of the European Union (Tab. 2). For two of the latter species, the European population trends are unknown, i.e. Baillon's Crake and Levant Sparrowhawk. For both, rather elusive species, more information on their distribution, phenology and population status in Montenegro, as well as their wider distribution and conservation status in the Balkans are needed. On the European level, Montenegro further bears a particular responsibility for Rock Partridge and Collared Pratincole whose populations are in decline across most of their European range, while Rock Partridge is still widely distributed and abundant in mountainous areas. The coastal nesting sites of Collared Pratincole in Ulcinj are under heavy pressure from urbanization, tourism and local recreation industries. At the same time, the species' internationally important population in the Ulcinj Salina is threatened by the ineffectiveness of water management after the abandonment of salt production (Sackl et al., in prep.).

Some of Montenegro's extensive forest ecosystems that harbour considerable populations of Western Capercaillie, woodpeckers and other forest birds as well as international important wetland habitats around Skadar Lake, are already formerly protected within the country's national park system. Nevertheless, like in other eastern and southern European countries, the main problems for bird and nature conservation derives from widespread corruption and violation of existing law. Hence, besides formal designation, the implementation and enforcement of spatial plans, conservation planning, of hunting laws and other regulations will be key future challenges.

Tab. 1: Surface area, number of breeding birds, numbers of breeding bird species relevant for IBA/SPA nomination as well as numbers and total surface area nominated as IBA/SPAs in Mediterranean countries.

THREATS

Out of 6 main threat categories identified in the 'National Biodiversity Planning to Support the implementation of the CBD 2011-2020 Strategic Plan in Montenegro' (GEF 2019), four are especially relevant to birds and can be to a large extent quoted in their original form. Another very relevant source of information about the general threats that are causing biodiversity and species population decline in Montenegro is the 'Fifth National Report to the United Nations Convention on Biological Diversity' (Marković 2014), prepared and adopted in the framework of the MoSDT.

In addition, there are some threats that are specific to birds, due to their ecology and habits, such as electrocution and collisions with wind turbines and high-voltage power-lines, which are far less common or significant for other groups of fauna or flora. The most important threats for birds in Montenegro are listed in this chapter.

Uncontrolled urban and tourism development

Road construction and hydro-technical infrastructure is a threat, particularly on the coast and in Podgorica. This leads to the loss, degradation and fragmentation of the remaining natural habitats, especially coastal and wetland habitats. Also, increased illegal construction and development in and around protected areas, in a major part of the coastal region and around mountain resorts, is threatening the bird populations. Wind-power and electrical grid constructions pose risks to birds more than to any other animal species. Electrocution is a common and probably significant cause of mortality for some species, i.e. Eurasian Eagle Owl Bubo bubo in Montenegro (CZIP pers. comm.).

Figure 19: Eurasian Eagle Owl *Bubo bubo*, electrocuted on a low-voltage electric pylon, 22nd February 2019. @J.Gardović

Changes in land use practices

Changes in land use practices are associated with urban and tourism development. Introduction of new practices in agricultural production leads to the loss of natural and semi-natural habitats. In Montenegro agro-intensification is (still) not a big problem. However, land use changes including conversion of agricultural land into built areas, abandonment of the traditional land use practices – grazing and haying is leading to a loss of biodiversity rich highland pastures, local loss of traditional mosaic landscapes and afforestation of open landscapes.

Unsustainable and illegal use of natural resources

In Montenegro, such activities are (in connection to birds) mostly due to the logging of natural forests, unsustainable game hunting and overfishing. The destruction of the last pockets of pristine and old-growth forests have resulted in an irreplaceable loss of these biologically and genetically rich and highly productive ecosystems. Many forest bird species depend on largely udisturbed forests and are susceptible to unsustainable logging practices. Unsustainable hunting of game and illegal hunting of protected species are significant problems in Montenegro. Unsustainable hunting of game species and persecution of raptors are captured in special sections.

Habitat loss

The most significant cumulative effect of the above mentioned threats to biological diversity is the loss of rare or endangered habitats and their associated rare, endemic or endangered species. Habitat fragmentation and habitat loss affects the majority of bird species in Montenegro. The most evident cases of this effect can be observed for coastal sand dune species, such as the European Oystercatcher, Little Tern, Kentish Plover, Collared Pratincole and others, and also for birds of steppe habitat such as Eurasian Thick-knee, Short-toed and Calandra Larks and many others. It is very important to repeat one of the main findings of the UN CBD report (Marković 2014), that "Indirect drivers of declining biodiversity are linked to various economic activities and management/governance weaknesses. Tourism, construction and forestry are the main economic sectors affecting negative changes recorded in Montenegro, followed by agriculture, transport and industry."

Poisoning and persecution of raptors

The results of interrogations of local hunters, shepherds and other local community members, as well as information provided by CZIP, shows that the systematic killing of raptors is one of the main problems for this vulnerable and mostly threatened group of birds. There are many proved records of killing falcons and hawks by spreading pigeon's backs with carbofurane, an extremely toxic pesticide that instantly kills a raptor when the pigeon (often harmed to be easily caught by raptor) gets caught.

Only 5 records of Peregrine Falcon presence and only one of Lanner Falcon were collected during the whole field work in 2017 and 2018. No active nests of Peregrine Falcon were found in 2018, despite active searching, and only one was found in 2017. Notably, Peregrine was not rare in Montenegro in the recent past and also Lanner Falcon most probably bred locally in small numbers until recently. The situation is thus critical and confirms the worst fears of the field experts. Most probably the main threatening factor is the systematic and focused persecution by pigeon-breeders and possibly other groups of people. This type of persecution is widespread and well organized and has the goal of systematic persecution of large numbers of raptors, especially Falcons and Hawks (Accipiter sp.).

Sometimes also other birds of prey are subject of persecution, very often raptors and owls. The best known cases were the deliberate killing of two satellite-tagged raptors: a Greater Spotted Eagle "Bruzda" on 3rd December 2012, shot on Skadar Lake and a Griffon Vulture "Perun", shot in Ulcinj Salina on 29th October 2018.

Especially in the past, but also nowadays, cases of deliberate poisoning of wolves and jackals lead to massive deaths of raptors, especially vultures. Most probably the majority of country's vulture colonies got wiped out by the collateral killing of vultures feeding on poisoned carrion. Sometimes the vultures were poisoned deliberately.

At least nine species of birds, all very charismatic and locally or even globally threatened, became extinct in Montenegro in the past 100 years due to persecution: Bearded Gypaetus barbatus, Griffon Gyps fulvus and Egyptian Vultures Neophron percnopterus, Lesser Clanga pomarina and Greater Spotted Eagles C.clanga, Eastern Imperial Eagle Aquila heliaca, White-tailed Eagle Haliaetus albicilla, Lanner Falcon Falco biarmicus and possibly Peregrine Falcon F. peregrinus. Finally, the Black Grouse Lyrurus tetrix was hunted by hunters until its extinction in Montenegro.

Figure 20: Greater Spotted Eagle *Clanga clanga*, named "Bruzda", ringed in Poland and shot on Skadar Lake, 3rd December 2012. @Vijesti

Figure 21: Griffon Vulture *Gyps fulvus*, named »Perun«, ringed in Croatia. The picture was taken on 28th of October 2018, one day before the bird got shot by a poacher in Ulcinj Salina. @M.Šoškić

Unsustainable hunting of game species and illegal hunting of protected species

In Montenegro, annually between 64.000 and 197.000 (average value of 130.000) birds are killed illegally (Brochet et al. 2016, BirdLife 2017). Those are mostly Common Quails Coturnix coturnix, different species of ducks Anatidae, shorebirds Scolopacidae and Rock Partridges Alectoris graeca.

Three threatened species of birds are still hunted as game species in Montenegro: Common Pochard (VU), Turtle Dove (VU), Rock Partridge (NT and Annex I). An additional two are listed as permanently protected game species: Hazel Grouse and Capercaillie, and as such listed in the hunting management documents and to some extent monitored by hunting associations. The hunting pressure on migratory populations of Turtle Dove and wintering Common Pochards is probably not as extensive in Montenegro than in some other Balkan countries. Still, the effects on the sharply declining populations of both globally threatened species is cumulative and unsustainable. The hunting pressure on resident Rock Partridge population is heavier and very widespread in Montenegro. Apart from the legal hunting pressure, there is also quite widespread poaching of this species that can in combination with the weak enforcement of the law, lead to significant population declines on local and country levels. The case of Black Grouse extinction in Montenegro during the second half of 20th century should be considered as a very important warning.

EPILOGUE

In Montenegro everything is linked to the rich, but wild, untamed nature. High steep mountains, deep blue see, clear rapid rivers, dark thick forests. Yes, exactly that – dark thick forests! How many countries with natural wealth depicted in an official name of the state do you know? Crna Gora – Montenegro – Black Mountain is one of very few in this sense! And the country is unique in many ways – its name is only one thing, but without thick old forest that name has no sense. As one can also not imagine Montenegro without its virgin rivers, dark blue Adriatic Sea, green lake eyes, inaccessible mountain ridges and not without eagle and falcon on its open skies. Especially not without the eagle and the falcon on its open skies! That is why the forests need to stay black and falcon an ornament of Montenegrin sky. That is why it is no wonder that half of the country would qualify as SPAs under the Natura 2000 network. Even before the Natura 2000 become an issue in this country, Montenegro already invented its own, unique Natura 2000. In 1991 Montenegro adopted a Declaration in which the country was declared as ecological country. With this declaration the government of Montenegro committed itself strategically to adopt and implement the highest standards of environmental protection, nature conservation and economic development, based on highest principles of ecological sustainability.

Things didn't work perfectly since then, but that is what often happens with the plans. Especially with the high-flying ones. Precious pieces of Montenegrin land have lost its natural character, have become wildly urbanized and irreversibly changed. Yet, many areas remain in good condition, healthy and clean, lush and strategically important for humans and other living beings. And that is where this unique country, a pearl of biodiversity and richness is getting its second chance. Second chance to live rich, to live lush, to live with full lungs.

An army of people was involved in this project, people from the government, civil society, European Union, citizens, experts. What I am absolutely sure made a common line for all of these people was that they recognized the potential of Montenegro to be an example. An example of the country living in harmony with its incredibly rich country. I strongly believe it is not too late for Montenegro to be known as a standard, a standard for a country that is in line with its natural heritage and richness. For me Montenegro equals 100% in this formula!

Borut Rubinić,
Key Expert in SPA preparation in Natura 2000 project in Montenegro

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