PROTECTION OF WATERBIRD HABITATS IN THE UPPER VISTULA RIVER VALLEY
LIFE.VISTULA.PL

INTERNATIONAL CONFERENCE

PRESENTATION ABSTRACTS

22ND-25TH OCTOBER, 2024

KATOWICE, POLAND

Main organiser

Regional Directorate for Environmental Protection in Katowice, Poland

Co-organisers

Upper Silesian Ornithological Society, Bytom, Poland

Upper Silesian Museum in Bytom, Poland

Institute of Systematics and Evolution of Animals, Polish Academy of Sciences, Kraków, Poland

The project LIFE16 NAT/PL/00766 LIFE.VISTULA.PL
"Protection of waterbird habitats in the Upper Vistula River Valley"
is co-financed by the European Union Life programme and
the Fund for Environmental Protection and Water Management

Contens

Nataliia Atamas[1], Olga Tomchenko[2], Igor Dzeverin[1]

[1]Schmalhausen Institute of Zoology, NASU, Ukraine; [2]Scientific Centre for Aerospace Research of the Earth Institute of Geological Science, NASU, Ukraine

atamasnataly@gmail.com, dzeverin@izan.kiev.ua, tomch@i.ua

A False Delta: habitat preferences and their impact on the population and nesting ecology of Marsh Terns in the Dnieper reservoirs (Ukraine)

The hydrological characteristics of the Dnieper reservoirs have shaped the distribution of aquatic vegetation, particularly in shallow areas, creating key nesting habitats for Black Terns *Chlidonias nigra* and Whiskered Terns *Chlidonias hybrida*. The Whiskered Tern has been colonizing these water bodies since the 1980s. One of the main factors potentially limiting the spread of marsh terns is the availability of nesting habitats. This study aimed to identify the factors that influence the nesting population sizes of both species and whether increasing vegetation cover affects them.

Seventeen Whiskered Tern colonies and 25 Black Tern colonies, observed from 2008 to 2015 in the northern part of the Kaniv Reservoir, were analysed. Parameters such as water levels, water and air temperatures, and vegetation cover were examined. Satellite images from Landsat 5, 7, and 8 were used to calculate NDVI and assess macrophyte areas.

Stable and unstable tern colonies were identified. In unstable colonies, pair numbers showed no dependence on locality for either species. In stable colonies, Black Tern showed a significant correlation with water levels during the breeding season, while Whiskered Tern was influenced by vegetation cover and maximum water levels. Black Tern exhibited strong site fidelity, while Whiskered Tern was more dependent on changes in habitat and abiotic factors. The population size of the invasive Whiskered Tern is more strongly linked to shallow water overgrowth and the development of secondary delta ecosystems in the reservoirs.

Océane Bégassat[1], Françoise Amélineau[1], Alexandre Corbeau[1], Rémi Chambon[1], Christophe de Franceschi[2], Laura Beau[3], Jean-Marc Paillisson[1]

[1]ECOBIO (Ecosystèmes, Biodiversité, Evolution), Univ Rennes, CNRS, Rennes, France; [2]CEFE (Centre d'Ecologie Fonctionnelle & Evolutive), Univ Montpellier, CNRS, EPHE, IRD, Montpellier, France; [3]Réserve Naturelle Nationale de Chérine, Saint-Michel-en-Brenne, France

oceane.begassat@univ-rennes.fr

First-ever high-precision data on space use by Whiskered Terns in French breeding grounds and during fall migration using biotelemetry

Wetlands are crucial ecosystems for many species of conservation concern, including migratory birds. Waterbirds that rely on wetlands can face both resource depletion and unpredictability and are expected to adjust their space use accordingly. Exploring how waterbirds use space and identifying their specific needs, notably regarding their foraging areas, is a critical issue with potential implications for conservation actions.

In this study, we first present unique results of a pilot study conducted in 2023 on the fine-scale space use by a wetland flagship species, the Whiskered Tern *Chlidonias hybrida*, in a historic French breeding stronghold, using high-precision biotelemetry data. Additionally, we provide preliminary results on the autumn migratory behaviour of Whiskered Terns equipped with GPS devices in 2024 from two French breeding regions.

In 2023, we equipped four adult Whiskered Terns with GPS devices and studied their daily movements throughout the breeding season. We highlighted that most of the foraging occurred within 2–3 km from the nest, resulting in restricted home range sizes (from 2.00 to 14.95 km2) throughout the season. We also showed that Whiskered Terns were faithful to their foraging areas throughout the season, foraging preferably in ponds (85–96% of all locations), and in grasslands (9% on average).

In 2024, we equipped 20 breeders from two distinct populations using high-frequency GPS transmitters and we are currently collecting data on the migration pattern. These biotelemetry studies offer promising prospects for research into the movement ecology of Whiskered Terns, which could be very useful for their conservation.

Mariem Belkadhi, Ádám Z. Lendvai

Department of Evolutionary Zoology and Human Biology, University of Debrecen, Hungary

Belkadhi.m@yahoo.com

Whiskered Tern Summer Fieldwork 2024

The Whiskered Tern *Chlidonias hybrida* is a widely distributed waterbird across Europe, Africa, and Asia, yet the Hungarian population remains poorly studied. This research aims to bridge that gap by exploring the Whiskered Tern population in Hungary, contributing to its conservation and investigating its genetic diversity, as well as its potential connections to other European populations. Additionally, the study focuses on understanding individual variation and physiological underpinnings of breeding behaviour, providing insights into the species' reproductive strategies.

Our study took place between May and July 2024 at the largest Whiskered Tern colony in Hungary (approximately 1300 breeding pairs), located in the Hortobágy Fishponds, within Hortobágy National Park. 424 nests were marked for monitoring purposes. These nests showed considerable variation in the material used by the birds to build their nests, which may significantly affect breeding success.

To understand if this variability is limited by availability of different building materials or individual preference for them, we implemented a pilot experiment offering the birds floating reed or water lilly stems (the two most frequently used nest materials). Our results showed significant individual differences in the birds' preference, potentially explaining variation in nest material use in the population. This finding may also have important conservation implications for the species. In the presentation, I will also discuss some plans for future studies with this population, focusing on the links between behavior, physiology, and conservation.

Jacek Betleja[1, 2], Mateusz Ledwoń[2, 3], Damian Czechowski[4]

[1]Upper Silesian Ornithological Society, Bytom, Poland; [2]Upper Silesian Museum, Department of Natural History, Bytom, Poland; [3]Institute of Systematics and Evolution of Animals, Polish Academy of Sciences, Kraków, Poland; [4]Regional Directorate for Environmental Protection in Katowice, Poland

betleja@muzeum.bytom.pl, Ledwon@isez.pan.krakow.pl,
damian.czechowski@katowice.rdos.gov.pl

Active protection of Common Tern in the Upper Vistula Valley - LIFE.VISTULA.PL

The Common Tern *Sterna hirundo* breeds primarily on sandy islands situated in the middle course of the Vistula River and its tributaries in Poland. The total number of breeding pairs in the Polish population is estimated to be between 6,000 and 8,000.

In the Upper Vistula Valley, the Common Tern breeds in various habitats, including fishponds, dammed reservoirs, gravel pits, and specially constructed floating platforms. Over the past few decades, ornithologists have monitored species' population and identified potential threats to its habitat. The size of the population has fluctuated from year to year, reaching a maximum of 625 pairs across 28 sites in 2022. The primary risks to the colony include flooding during periods of high water levels in the Goczałkowicki Reservoir and the overgrowth of nesting islands.

The main aim of the LIFE.VISTULA.PL project to protect and improve the habitat of wetland birds, in particular Night Heron *Nycticorax nycticorax* and Common Tern *Sterna hirundo*. The activities will be carried out in four Natura 2000 areas. The project has been made possible thanks to the financial support of the European Union and the National Fund for Environmental Protection and Water Management.

The project includes the construction of new islands on ponds and the Goczałkowice Dam Reservoir, as well as the reinforcement of existing islands in ponds and gravel pits. Innovative technology and materials have been employed. The project may also serve as a model of effective collaboration between diverse groups, including fishermen, ornithologists, state wildlife protection officials, environmental organizations, and local authorities.

Jacek Betleja [1, 2], Mateusz Ledwoń [1, 3]

[1]Upper Silesian Ornithological Society, Bytom, Poland; [2]Upper Silesian Museum, Department of Natural History, Bytom, Poland; [3]Institute of Systematics and Evolution of Animals, Polish Academy of Sciences, Kraków, Poland

betleja@muzeum.bytom.pl, Ledwon@isez.pan.krakow.pl

Long-term monitoring and conservation of the Black-crowned Night Heron in Poland and the Upper Vistula Valley

The Black-crowned Night Heron *Nycticorax nycticorax* nests in colonies on vegetated islands in fishponds and gravel pits. In the Upper Vistula Valley, within four Natura 2000 areas, Night Herons have been recorded nesting in 21 locations across 30 different islands, with up to 260 nests on a single island. Since monitoring began in 1990, the number of Night Herons in this region has increased more than 15-fold, from 80 nests in two colonies to a maximum of 1,275 nests in 11 colonies by 2022. Nationwide monitoring of the breeding population has been conducted by the Chief Inspectorate of Environmental Protection (GIOŚ) since 2009.

In 2024, 1,147 pairs of Night Herons nested in Poland. Despite a long-term upward trend, 2024 marked the second consecutive year of population decline, with an 8.7% decrease compared to 2023. However, the number of Night Herons nesting outside the Upper Vistula Valley has increased, with five additional nesting sites contributing to 17.3% of the national population in 2024.

As part of the LIFE VISTULA project, seven islands used by nesting Night Herons were restored. Innovative techniques, including the use of vinyl sheet piles to reinforce the islands' shores, have been implemented to ensure long-term durability and resistance to water erosion. Additionally, the embankments surrounding the ponds with Night Heron nesting islands were also strengthened with vinyl sheet piles as part of the comprehensive habitat protection efforts.

Hela Boughdiri[1], Grant C. McDonald[2], András Kosztolányi[2], Tamás Székely[1, 3]

[1]University of Debrecen, Hungary; [2]University of Veterinary Medicine, Budapest, Hungary; [3]University of Bath, UK

hela.boughdiri@gmail.com

A novel trial using Druid Nano Tags to track Shorebird movements in Madagascar

Tracking shorebirds is essential for understanding their migration patterns, habitat use, and informing conservation efforts. This study represents an initial exploration of using Nano satellite tags from the Druid Technology Company to track the movements of small-sized shorebirds over an extended period. A preliminary trial was conducted by our team from late April to the end of June 2023 with two shorebird species, White-fronted Plover *Charadrius marginatus* and Madagascar Buttonquail *Turnix nigricolis*, in the South-West of Madagascar.

Overall, these tags appear to be non-invasive for studying shorebirds, and we recommend their use on plovers, as they have proven highly effective. However, this technology is less suitable for species that prefer shaded areas, like the Madagascar Buttonquail, due to challenges with sunlight exposure and tag charging. While the initial results are promising, a more comprehensive evaluation over the coming years is necessary to confirm the efficiency of these tags, as well as their complete non-invasiveness for small bird species.

Szymon Bzoma, Adam Janczyszyn, Andrzej Kośmicki, Helena Trzeciak

Waterbird Research Group KULING, Gdynia, Poland

kuling@wp.pl

Successful creation of an artificial habitat for breeding Sandwich Terns in the port of Gdańsk

Sandwich terns had nested in Poland in the "Mewia Łacha" nature reserve. However, since 2015, the island with the colony has been connected to the mainland by the breakwaters at the Vistula river mouth. Despite the record size of the colony in 2016 (770 pairs), breeding was only partially successful, as terrestrial predators destroyed the colony. The Sandwich Terns colony moved to the Common Tern colony in the port of Gdańsk, but the breeding there was also unsuccessful, and the colony itself was a problem in the extension of the wharf it occupied. The Maritime Office in Gdynia, while expanding the island breakwater, designed and built a bird habitat with an area of approximately 1000 m^2.

In 2022, we launched a campaign to lure birds to a new place. Black-headed Gulls were the first to nest, followed by Common and Sandwich Terns. In the first year, 355 pairs of Sandwich terns nested and raised approximately 300 young. In the second year, 455 pairs nested and raised 275 young. In both years, the presence of avian flu was recorded in the colony. The year 2024 was already without this disease, and the colony numbered 675 pairs. The year was very successful, with low chick mortality and a total of approximately 1100 of them became able to fly.

Gašpar Čamlík, David Horal, Jaroslav Zaňát, Petr Macháček, Vlasta Škorpíková, Petr Berka

Czech Society for Ornithology – South Moravian Branch, Brno, Czech Republic

camlik@birdlife.cz, David.Horal@seznam.cz

Colonies of herons, egrets and cormorants in South Moravia, Czech Republic

Colonies on islands are regularly counted after the breeding season and after leaf fall. Additionally, we check colonies at least 1-2 times per season by drone. The number of species detected is then compared with the number of nests counted during the post-leaf-fall census. Due to the high density of nests and overlapping branches, this drone-based count is supplementary and may help reveal the presence of rarer species. We avoid entering nesting colonies on islands during the breeding season to prevent disturbance, as young birds tend to jump out of the nests when disturbed.

We take a different approach when inspecting accessible colonies of Grey Herons. We regularly visit these colonies and count them at least 3 times during the season, similarly, mixed colonies with White Storks (currently 3 such colonies in the floodplain forests). We check the nesting sites of Purple Heron and Great Egret by drone from a safe height several times per season.

In general, the target species are thriving, and positive trends in abundance are being recorded. The number of species is also increasing. In recent years, we have observed a resurgence of Great Egrets, Spoonbills, and a new species for the Czech Republic – the Pygmy Cormorant. On the contrary, a negative trend, including the disappearance of colonies, can be observed in the traditional colonies of Grey Herons and especially White Storks in floodplain forests. In this areas, disturbance by White-tailed Eagle and Imperial Eagle plays a key role.

Damian Czechowski, Michał Szlęzak

Regional Directorate for Environmental Protection in Katowice, Poland

damian.czechowski@katowice.rdos.gov.pl

michal.szlezak@katowice.rdos.gov.pl

People-Fish-Birds – summary of the LIFE.VISTULA.PL project "Protection of waterbird habitats in the Upper Vistula River Valley"

Carp ponds and other reservoirs of anthropogenic origin located along the valleys of the Vistula, Soła, Skawa rivers and their smaller tributaries are the area with the highest concentration of artificial water reservoirs in Poland. The development of these facilities for fishing and angling makes them extraordinarily attractive for birds. As a result, they have been a focal point of research for ornithologists for many decades. Unfortunately, islands on ponds and on post-exploitation reservoirs are not stable and are subject to erosion.

After Poland's accession to the European Union, most of the ponds and anthropogenic reservoirs in this area were included in the Natura 2000 network. The management plans for these areas indicate the destruction of islands as one of the threats. Regional Directorates for Environmental Protection from Katowice and Kraków, in cooperation with ornithologists from the Upper Silesian Ornithological Society and The Society for the Earth, prepared a project under the LIFE Programme to protect bird habitats. This led to the creation of the LIFE16 NAT/PL/000766 project "Protection of Wetland Bird Habitats in the Upper Vistula Valley", implemented from 2018 to 2024. Its scope covered the Lesser Poland and Silesian voivodeships and 4 Natura 2000 areas located between Skoczów and Zator: Lower Skawa Valley PLB120005, Lower Soła Valley PLB120004, Pounds in Brzeszcze PLB120009, Upper Vistula Valley PLB240001.

The main objective of the project was to improve the condition of wetland bird habitats, in particular Night Heron and Common Tern, and increase this bird population after the project was completed. Thanks to the protective measures taken, the number of Night Heron in the Upper Vistula Valley reached a record level at the end of the project and the population of this species already numbers over 1,250 breeding pairs. This indicates the huge potential that the environment of carp ponds, gravel pits and river valleys has for this species. The Common Tern also reached a record level, with almost 600 breeding pairs in several colonies in 2022. As part of the project, 12 islands on carp ponds and 3 islands on two gravel reservoirs were renovated and secured. Aditionally, an island called "Bird Barrel" was built on Goczałkowice Lake.

Eleven islands for the Night Heron were planted with elderberry and willow. Special gravel beaches were made on eight islands for the Common Tern. Three islands were prepared for both species. Six sections of the pond embankments have been protected against leaks. To

obtain information about the habitats used by Night Heron during feeding and migration, 82 telemetry transmitters were installed: 55 on adult birds and 27 on young ones.

Tourist infrastructure was also developed: a 15-meter-high observation tower at the Goczałkowice Dam Reservoir, a parking area covering over 300 m^2, and 4 fishing piers. An ornithological hide has been built at Barzyniec Pond.

The project used an innovative method of securing the islands so that these habitats would be durable for 20 years, as required by the European Commission. The team of engineers proposed to carry out construction works using PVC vinyl sheet piles to isolate the island area from the impact of waves and animal activity. This shape allowed for the formation of vertical walls of the island, which reduces the occupation of the area and is acceptable to the administrator of the ponds. The beaches for Common Tern were prepared by profiling the ground, covering it with a 1.2 mm thick foil and pouring a 10 cm layer of gravel. Special drainage holes were cut in the sheet pile islands to allow for water runoff during heavy rains.

The project team considered the participation of fishermen in this nature project a success from the outset, as the activities took place directly on the ponds. The team had the opportunity to observe how the ponds function and how carp breeding is influenced by water availability and weather conditions. The fishermen saw that they could have support from ornithologists in the case of various types of agreements and consultations with officials. The officials understood that without a well-functioning carp economy and cooperation between all parties, it is not possible to manage protected areas.

It is important to accept that carp ponds, dam reservoirs and gravel reservoirs are not a natural part of the landscape. They require human intervention. The lack of activities in carp ponds may become a serious threat to bird habitats. Carp production in these facilities provides breeding and feeding grounds for many rare bird species.. It is necessary to promote the motto “people-fish-birds” and appreciate the role of carp farming in maintaining the habitats of several dozen rare and endangered bird species. Extensive fish breeding is one of the most important elements in the system of protection of water and marsh birds in southern Poland. Traditional carp breeding in ponds is exceptionally friendly to the natural environment without the need to introduce additional restrictions.

Complete abandonment of fishing activities may, within a few years, lead to the disappearance of the population of most bird species associated with carp ponds in Natura 2000 areas and beyond.

Alessandra Gagliardi[1], Michelangelo Morganti[2], Stefano Volponi[3], Mauro Fasola[4]

[1]Istituto Oikos ETS – via Crescenzago, Milano, Italy; [2]Istituto Ricerca Sulle Acque, Brugherio, Italy; [3]Istituto Superiore per la Protezione e la Ricerca Ambientale (ISPRA), Italy; [4]Istituto Ricerca Sulle Acque, Brugherio, Italy

alessandra.gagliardi@istituto-oikos.org, michelangelo.morganti@irsa.cnr.it, stefano.volponi@isprambiente.it, fasola@unipv.it

50 years of Black-crowned Night-Heron *Nycticorax nycticorax* monitoring in north-western Italy: what have we learnt?

The Black-crowned Night-Heron *Nycticorax nycticorax* is among the species included in a long-term monitoring program of colonially breeding Ardeidae and allied waterbirds conducted across northwestern Italy (Fasola et al. 2023). This program started in 1972 and is currently ongoing, reaching its 52nd year of counts in 2023, making it the longest survey of bird populations in Italy. The surveyed area (58,000 km^2) includes Lombardy, Piedmont and part of Emilia-Romagna region, and focuses on the agricultural area of upper Po plain, one of the main rice-production areas of Europe.

While some species greatly increased in number during the five decades of monitoring, particularly from 1985 to 2000, thanks to reduced human-induced mortality and to meteorological variations (Fasola et al. 2010), the Black-crowned Night-Heron has shown an opposite decreasing trend in nest number since the mid-1990s, with a phase of stabilization in the last years. This decrease is particularly evident in the rice-production areas between Piedmont and Lombardy (Ranghetti et al. 2018) where colonies that once hosted thousands of nests in the 1970s and 1980s are now much smaller or nonexistent. The reason for this decrease can be only partially found in the changes in the cultivation of rice-paddies, which have been cultivated without permanent flooding since 2000 and are therefore less suitable as foraging habitat. However, since the species shows a completely different trend from other Areidae, it is very likely that there are other factors influencing the population dynamics, that need further investigation.

Fasola M, Pellitteri-Rosa D, Pinoli G, Alessandria G, Boncompagni E, Boano G, Brangi A, Carpegna F, Cassone P, Della Toffola M, Ferlini F, Gagliardi A, Gargioni A, Gola L, Grattini N, Gustin M, Lavezzi F, Maffezzoli L, Martignoni C, Musumeci R, Pirotta G, Provini I, Ravasini M, Re A, Riboni B, Tamietti A, Viganò E, Morganti M. 2023. Five decades of breeding populations census for 12 species of colonial waterbirds in northwestern Italy. Scientific Data10: Article number 239, https://doi.org/10.1038/s41597-023-02072-8.

Fasola M, Rubolini D, Merli E, Boncompagni E, Bressan U. 2010. Long-term trends of heron and egret populations in Italy, and the effects of climate, human-induced mortality, and habitat on population dynamics. Population Ecology 52: 59-72 (DOI 10.1007/s10144-0090165-1).

Ranghetti L, Cardarelli E, Boschetti M, Busetto L, Fasola M. 2018. Assessment of water management changes in the Italian rice paddies from 2000 to 2016 using satellite data: a contribution to agro-ecologicalstudies. Remote Sensing 10, 763.

Ana Galov[1], Veronika Lončar[1], Jelena Kralj[2], Simon Piro[3], Christof Herrmann[4], Iztok Škornik, Davorin Tome[6], Gyula Kovács[7], Bálint Preiszner[8], Péter Szinai[9, 10], Stefano Volponi[11]

[1]Faculty of Science, University of Zagreb, Zagreb, Croatia; [2]Croatian Academy of Sciences and Arts, Zagreb, Croatia; [3]AG Vogelwarte, Zoological Institute and Museum, University of Greifswald, Greifswald, Germany; [4]Agency for Environment, Nature Conservation and Geology Mecklenburg- Vorpommern, Hiddensee Bird Ringing Scheme, Güstrow, Germany; [5]Sečovlje Salina Nature Park, Soline Pridelava Soli d.o.o., Portorož, Slovenia; [6]National Institute of Biology, Ljubljana, Slovenia; [7]BirdLife Hungary South-Balaton Local Group, Balatonlelle, Hungary; [8]HUN-REN Balaton Limnological Research Institute, Tihany, Hungary; [9]Balaton-felvidéki National Park Directorate, Csopak, Hungary; [10]Bird Ringing and Migration Study Group of BirdLife Hungary, Budapest, Hungary; [11]Italian Institute for Environmental Protection and Research, Ozzano dell'Emilia, Italy

ana.galov@biol.pmf.unizg.hr

Neutral genetic markers reveal low population genetic structure in Common Terns *Sterna hirundo* within Europe

Genetic markers play a crucial role in avian ecology studies, offering insights into ecological and evolutionary processes. Neutral genetic markers assess genetic variations that do not appear to affect fitness or adaptive traits of an organism, meaning they are not subject to natural selection. They are commonly used to quantify genetic diversity, which is important to assess the health of populations and their resilience to environmental change, and to infer population genetic structure, aiding the understanding of migration patterns, connectivity of populations and barriers to gene flow. These genetic analyses are important for developing effective conservation strategies, particularly for long-distance migrants.

This study aimed to investigate the population genetic structure and diversity of common terns sampled across three European regions – one northern and two southern – using microsatellite markers and a fragment of the mitochondrial DNA control region. High genetic diversity was found in both marker types. Various analyses revealed weak or absent population genetic structure, indicating high gene flow between groups. The low genetic differentiation observed likely arises from differing migration patterns, particularly between the two southern groups. Our findings suggest that geographical distance between breeding colonies has minimal impact on population genetic differentiation. However, the high dispersal indicated in this study may increase the extinction risk for small populations. Therefore, conservation efforts should focus on protecting multiple breeding sites, as well as currently unoccupied but suitable areas, to preserve the genetic diversity and resilience of Common Terns in the future.

Protection of waterbird habitats in the Upper Vistula River Valley
LIFE16NAT/PL/000766

Mikhail Iliev [1, 2]

[1]Bulgarian Society for the Protection of Birds/Birdlife Bulgaria, [2]Vertebrates Department, National Museum of Natural History, Bulgarian Academy of Sciences, Sofia, Bulgaria

mihail.iliev@bspb.org

The Common Tern *Sterna hirundo* in Bulgaria – population state, distribution and conservation

The Common Tern *Sterna hirundo* is a passage migrant and regular breeder in Bulgaria. At national level it is strictly protected species, listed as endangered in the Bulgarian Red Book. The species shows dispersed but stable breeding distribution, with higher concentrations along the Black Sea coast (mainly Burgas wetlands) and the Danube River (usually on islands). Its density pattern is uneven, with higher aperiodic fluctuations in different years based on suitable breeding habitats availability and the conditions of the food base.

The most recent estimation of the breeding population size is 500 to 1500 pairs, according to other authors – 500 to 540 pairs. The highest number at single site is reported at hyper-saline Atanasovsko Lake near Burgas – 830 breeding pairs in 1994 and more than 1000 pairs in 2017. Threats such as habitat loss and fragmentation, lack of food resources, human disturbance, and natural factors such as high water levels and predation negatively influence the species' breeding. During migration the Common Tern appears in various wetlands across the whole country.

Since 1986, various artificial constructions have been created in wetlands along the Black Sea to enhance the breeding success of several tern species. These include small to medium-sized artificial islets, stationary platforms, and floating rafts. For the newest ones, materials such as metal grid and tiles as well as traditional wood have been integrated to make them steady longer. Breeding on platforms designed especially for Dalmatian Pelicans has also been registered.

Magdalena Jędro, Grzegorz Jędro, Małgorzata Goc, Rafał Banul

Slowinski National Park, Smołdzino, Poland

m.jedro@slowinskipn.pl, g.jedro@slowinskipn.pl, m.goc@slowinskipn.pl, r.banul@slowinskipn.pl

Active protection of waterbirds in the Slowinski National Park

Active protection of waterbirds in the Slowinski National Park is conducted on several fronts. Waterbirds such as shorebirds, ducks and rails have benefited in recent years from the LIFE+ Project "Conservation of selected habitats and species in Ostoja Slowinska PLH220023 and Pobrzeze Slowinskie PLB220003 Stage I". As part of the project, the drainage system was modernized to manage water levels, maintaining an optimal level in the spring and to enable meadow mowing in the late summer. The Łupawa River was renaturalized by breaching part of the riverbank, allowing the river to flood its floodplain. This improved habitat conditions for birds, leading to the stabilization or increase in the number of breeding pairs of species such as the Northern Shoveler, Northern Lapwing, Common Redshank, Common Snipe, Spotted Crake and Corncrake. Another ongoing activity in the Park is the trapping of American mink, which began in 2014 as part of the LIFE+ project „Polskie Ostoje Ptaków" (LIFE09 NAT/PL/000263) and continues today. Every year, about 20 mink traps are set near watercourses and important bird breeding grounds in the Park. So far, 77 American minks have been caught.

The final activity is the protection of ringed plovers. Between 1968 and 1978, 30-40 pairs of ringed plovers nested on the beaches of Słowiński National Park. However, by 2003-2004, only 16-17 pairs remained. Annual monitoring by Park staff revealed a further decline, with just 9-14 pairs between 2012 and 2018. Due to the declining population of this species, Słowiński National Park, in cooperation with the KULING Waterbird Research Group and the WWF Blue Patrol, has been protecting nests since 2019 by installing nest exclosures. They are placed on previously discovered plover nests to protect the eggs from predation and accidental trampling by people. Thanks to this project, the ringed plover population has increased and now stands at 25-30 breeding pairs, which is close to the numbers recorded in historical times.

Jelena Kralj[1], Željko Pavlinec[2], Sanja Barišić[1], Davor Ćiković[1], Vesna Tutiš[1]

[1]Institute of Ornithology, Croatian Academy of Sciences and Arts, Zagreb, Croatia; [2]Aquarium Pula, Croatia

jkralj@hazu.hr

Foraging and prospecting movements of Common Terns in Croatia

The Common Tern *Sterna hirundo* breeds and forages in a wide variety of habitats in both freshwater and marine environments. In Croatia, both freshwater and marine populations are present, inhabiting areas located between 200 and 300 km apart. Using GPS loggers, we studied the foraging range, patterns, and colony attendance of 26 adult breeding Common Terns from freshwater and marine colonies. Terns from freshwater colonies foraged at shorter distances from colonies and had higher daily colony attendance than terns from marine colonies.

The maximum distance to the colony, as well as 50% and 95% utilisation distributions, were higher during the chick-rearing phase, while colony attendance was higher during the incubation. Compared to freshwater terns, marine birds foraged later in the evening, which was probably related to the local wind dynamics. Freshwater colonies are nowadays located on islands at gravel pits, but terns mostly foraged along parts of the river shallower than 1 meter. Terns often foraged in the area where historical colonies on river islands existed, and birds from colonies situated further away had larger foraging ranges and shorter colony attendance.

Adult Common Terns showed prospecting movements during the active breeding, between two nesting attempts, and during the post-breeding period. Active breeders prospected colonies at distances up to 70 km, while failed breeders up to 108 km. Ongoing and required conservation measures to protect freshwater terns are discussed.

Nathalie Kürten, Sandra Bouwhuis

Institute of Avian Research, Wilhelmshaven, Germany

nathalie.kuerten@ifv-vogelwarte.de

The Banter See Common Tern Project – 30+ years of research and conservation

In 1992, a long-term individual-based study was initiated to study the life history of common terns breeding at the Banter See in Wilhelmshaven, Germany. To this end, 101 adult birds were caught and marked with transponders, and since 1992 all locally hatched birds have similarly been marked with a transponder shortly before fledging. The colony site consists of 6 concrete islands, each of which measures 10 by 5 meters and is surrounded by a 60 cm wall protecting the colony against flooding and rat predation. The walls support 44 platforms for terns to land on, and each platform is equipped with an antenna that reads transponder codes to record the presence of all transponder-marked individuals.

During incubation, which is shared between partners, additional antennae are placed at each nest for 1–2 days to identify breeding individuals. Combined with thrice-weekly checks of nests to record reproductive parameters and to mark offspring, these methods enable the systematic and remote documentation of individual presence, reproductive performance and survival. In 2006, blood sampling of breeding adults was introduced as a method, and since 2016, we extend our view of the Banter See common terns beyond the breeding season by studying their migration using light-level geolocators. Making use of these data sets, we aim to identify threats Common Terns may face across the annual cycle and life, and provide knowledge needed to inform conservation efforts.

Mateusz Ledwoń[1, 2] **Jacek Betleja** [1, 3]

[1]Upper Silesian Ornithological Society, Bytom, Poland; [2]Institute of Systematics and Evolution of Animals, Polish Academy of Sciences, Kraków, Poland; [3]Upper Silesian Museum, Department of Natural History, Bytom, Poland

Ledwon@isez.pan.krakow.pl, betleja@muzeum.bytom.pl

Night Heron tracking - identification of feeding and wintering sites - LIFE.VISTULA.PL

The Night Heron is a colonial species, active both during the day and at night. In Poland, it is under strict protection and requires active protection. In our country, 1,200-1,300 pairs of this species breed every year, the vast majority of them in the Upper Vistula Valley. One of the main tasks of the Life.Vistula project entitled "Protection of Wetland Bird Habitats in the Upper Vistula River Valley" was to determine the foraging habitats of Night Heron in Upper Vistula Valley.

In 2019 and 2020, 55 adults and 27 juveniles from seven breeding colonies were equipped with GPS/GSM transmitters (Ecotone). The proportion of habitats used by birds was surveyed during the breeding season of adult birds and, in the case of juvenile birds, before the start of autumn migration. The habitat that was most frequently used by both adults and juveniles was the carp ponds (~50% of locations). The next categories in terms of frequency were rivers (~30% of locations) and small watercourses (~10% of locations). Birds also used gravel pits, floodplains, post-mining settlements, dam reservoirs, and ponds. The proportion of habitats used by birds often varied between individual adults even from the same colony.

Adult birds spent winter in three regions: Southern Europe (Italy and Greece, 14% of individuals), Northern Africa (Algeria and Tunisia, 21% of individuals), and in Sahel (between Senegal and Chad, 64% of individuals). Night Herons mainly preferred the Inner Niger Delta, Lake Chad region and valleys of other major rivers: Doué, Tano, Tinkisso, Konkouré, and Rio Corubal.

Mateusz Ledwoń[1], Adam Flis[2], Bartłomiej Kusal[1], Halszka Łożyńska[1], Agata Banach[1], Frederick Angelier[3], Grzegorz Neubauer[4], Marta Gołek[4], Nathalie Kürten[5], Nataliia Atamas[6], Jacek Betleja[7]

[1]Institute of Systematics and Evolution of Animals, Polish Academy of Sciences, Kraków, Poland; [2]Institute of Nature Conservation PAS, Kraków, Poland; [3]French National Centre for Scientific Research (CNRS), [4]University of Wrocław, Poland; [5]Institute of Avian Research, Germany; [6]Schmalhausen Institute of Zoology, NASU, Ukraine; [7]Upper Silesian Museum, Bytom, Poland

Ledwon@isez.pan.krakow.pl

Whiskered Tern *Chlidonias hybrida* - what we know about this species from research in the Upper Vistula Valley

The Whiskered Tern has been monitored in the Upper Vistula Valley since 1986, when it first nested here. In 2021, almost 2000 pairs were already breeding here. Currently almost the entire population nests on carp ponds. Numerous surveys have been carried out on the population in the Upper Vistula Valley over the past two decades. The main objective was to study the life history parameters. Among other aspects, we have studied breeding biology, parental investment, extra pair paternity, concentration of hormones in adults, males and females condition, development of sexual size dimorphism, sex ratio in chicks, migration of adults and prevalence of haemosporidian parasites.

The Whiskered Tern is a semi-precocial, colonial waterbird species, with moderate sexual size dimorphism and long paternal care. Males fed females before and during egg laying. During courtship feedings females deceived alien males to obtain food from them without any cost. The rates of extra-pair paternity and intra-specific brood parasitism were low. Both parents incubated eggs and brood chicks. Males provided more food for chicks than females. Almost all females deserted offspring and partner. Half of them deserted during the chick-rearing period, the other during post-fledging period. Termination of parental care by females had no effect on fledging success. After desertion, only about 5% of females remated and renested. Sexual dimorphism developed during the chick growth phase. The sex ratio among chicks and fledglings was equal. Females started their autumn migration earlier than males, and both sexes wintered mainly in the Nile Delta region.

Current projects include research on apparent survival rates of males and females, heavy metal concentrations in chicks and adults, physiological and genetic aspects of aging, colony formation (using drones), and moulting patterns in males and females.

Petr Musil[1], Zuzana Musilová[1], Monika Homolková[1], Dorota Gajdošová[1], Milan Hladík[2], Diego Pavón-Jordán[3]

[1]Faculty of Environmental Sciences, Czech University of Life Sciences, Prague, Czechia; [2]Water Management Development and Construction, Czechia; Department of Terrestrial Ecology, Norwegian Institute for Nature Research (NINA) Trondheim, Norway

p.musil@post.cz

Floating artificial as the measure for support of waterbird breeding populations

Reproduction success, as the critical driver of population change, is strongly affected by the environmental conditions at the breeding site. The lack of suitable nesting sites leads to inter- and intra-specific competition for this critical resource and lower reproduction success. Generally, the duck species reach higher reproduction success, particularly with lower clutch predation risk, in Black-headed Gull and Common Tern colonies, protecting nest against predators. In this context, we initiated the EEA project (Norway grants) in 2022 aimed at implementing a network of floating artificial islands in artificial fishponds to provide alternative breeding opportunities for waterbird species of interest (Mallard, Common Pochard, Tufted Duck, Black-headed Gull and Common Tern). We installed 21 floating islands (32 m^2 each) in South and North Bohemia. The gabion-based construction is durable but light and flexible, and it flows with the help of plastic tubes. Coconut material fixes the macrophytes.

In breeding seasons 2023 and 2024, we recorded successful breeding of the target species: Mallard, Common Pochard, Tufted Duck, Black-headed Gull, and Common Tern. High occupancy of the islands by Black-headed Gulls and Common Terns was observed, especially in the vicinity of the breeding colonies of the species. These species also created mixed colonies with Common Pochard, Tufted Duck and other species. The overgrazing of island plants by moulting Mute Swans and Greylag Geese was recorded in some areas, recently solved by the Technology Agency of the Czech Republic project.

The high potential of effective management of the artificial islands revealed the recovery of breeding females of Red-listed Common Pochard in local fishpond systems close to Kardašova Řečice. This intervention (as a Nature-Based Solution) will improve the ecological value of intensively managed freshwater wetlands, which are critical for perpetuating populations of many waterbird species.

Marcelina Poddaniec

[1]Royal Society for the Protection of Birds (RSPB) Wales, Anglesey, UK

Marcela.poddaniec@gmail.com

Conservation of *Sterna* Terns: strategies implemented by the Royal Society for the Protection of Birds in coastal island colonies

The conservation of Sterna terns, particularly the Roseate Tern *Sterna dougallii*, at their breeding colonies is a key priority for the Royal Society for the Protection of Birds (RSPB) in coastal island habitats. This study focuses on the conservation strategies implemented at The Skerries, a vital breeding colony on the Welsh coast.

The methods employed include habitat management through targeted vegetation removal to maintain suitable breeding conditions. Predator control is another critical strategy, primarily aimed at gulls, which involves scaring them away from tern colonies, establishing exclusion zones, and constructing cane barricades to prevent nest robbing. Furthermore, nest boxes are provided to protect against weather and predators, while also creating nesting sites for the Roseate Tern.

Population monitoring is a core aspect of the conservation efforts. Productivity is assessed by studying nests in experimental enclosures, conducting clutch counts, and observing pairs and fledglings from vantage points. Fledgling and chick ringing, along with color-ringing of adults, contributes to long-term survival studies. This integrated approach allows for ongoing evaluation of the effectiveness of these conservation strategies.

Kateřina Rohová, Ivan Mikuláš

Department of Biodiversity Monitoring, Nature Conservation Agency of the Czech Republic, Prague, Czechia

katerina.rohova@nature.cz, ivan.mikulas@nature.cz

Exploring the life of the Common Tern in the Czech Republic: population dynamics, conservation initiatives, and future perspectives

This presentation examines the Common Tern *Sterna hirundo* in the Czech Republic, focusing on its population dynamics, conservation efforts, and future outlook. As an important species in the country's wetland ecosystems, the Common Tern is increasingly threatened by habitat loss, climate change, and human disturbances. We will analyse recent population trends specific to the Czech Republic, detailing fluctuations in numbers and identifying key factors influencing these changes.

The discussion will also highlight ongoing conservation initiatives aimed at safeguarding critical breeding habitats, emphasizing collaborative efforts between government agencies, non-governmental organizations, and local communities. Additionally, future perspectives for the Common Tern will be addressed, considering the environmental challenges it faces and the importance of continued conservation efforts. By raising awareness of the status of this species in the Czech Republic, the aim is to foster a collective commitment to its protection and sustainability, ensuring its presence for future generations.

Karolina Skorb

Institute of Systematics and Evolution of Animals, Polish Academy of Sciences, Kraków, Poland; Upper Silesian Ornithological Society, Bytom, Poland

skorb@isez.pan.krakow.pl

Anthropogenic material in waterbirds breeding colony in the upper Vistula valley

The incorporation of anthropogenic debris into waterbird colonies has been increasingly documented, often leading to harmful interactions with wildlife. In this study, we collected and analyzed debris over three breeding seasons (2021-2023) from a mixed colony of Black-headed Gulls *Chroicocephalus ridibundus*, Common Terns *Sterna hirundo*, and Mediterranean Gulls *Ichthyaetus melanocephalus* on an artificial island (Bird Barrel) in Goczałkowice Dam Reservoir, Upper Vistula Valley.

Debris was categorized by colour, type, weight, and presumed source, and comparisons were made with the number of active nests per year. Additionally, pellets were collected, with the majority containing anthropogenic material. Plastic bags and food packaging were the most frequent debris types, likely sourced from nearby landfills where birds forage. However, unlike previous studies, debris was rarely used in nest construction, with birds favoring natural materials such as twigs and reeds. Some anthropogenic items unsuitable for nesting were found, suggesting potential use in play behaviour. These findings highlight the significant impact of human activity on waterbird colonies, especially as anthropogenic material is often ingested by birds, which poses serious health risks. Improved waste management near key foraging areas is essential to mitigate these harmful interactions.

Aleksandra Szwagierczak, Christian Brummer

Landesbund für Vogel- und Naturschutz in Bayern (LBV), Kreisgruppe Landshut, Germany

aleksandra.szwagierczak@yahoo.com, christianbrummer@gmx.de

Common Terns at the river Isar in Lower Bavaria - experiences of 50 years population management

Until the middle of the 20th century Common Tern was a widespread species in Bavaria, inhabiting the subalpine river systems south of the Danube. However, massive river regulation projects and increasing recreational use of riverbanks led to successive disappearance of natural breeding habitats and consequently to population decline. Since 1983 Common Terns breed in Bavaria only on artificial floating rafts and, in small numbers, in secondary biotopes. Various targeted conservation measures have enabled the numbers to recover, from regional minimum of 37 breeding pairs to over 400 pairs (2022) – a more than tenfold increase. Due to this significant population recovery, Common Tern, that had been classified as "Critically Endangered" in years 1976 - 2015 was downgraded to "Vulnerable" on Bavaria's Red List of Threatened Species in 2016.

Since the early 1980s Bavarian population centre of Common Tern is localized in the area of Middle Isar in Lower Bavaria. Conservation efforts carried out there at two neighbouring artificial reservoirs and two gravel pits have led to establishment of local population of around 90 breeding pairs. With more than 2000 successfully fledged juveniles, these breeding sites show one of the highest reproduction rates in southern Germany.

In the course of our presentation we will share our experiences in the management of Common Terns. The focus will be put on technical requirements for nesting rafts and nesting islands, measures for increasing the reproduction rate and experiences with competitor species.

Stefano Volponi[1], Alessandra Gagliardi[2]

[1]Istituto Superiore per la Protezione e la Ricerca Ambientale (ISPRA), Italy; [2]Istituto Oikos ETS – via Crescenzago, Milano, Itlay

stefano.volponi@isprambiente.it, alessandra.gagliardi@istituto-oikos.org

Long-term decline and changes in the seabird community breeding in the lagoons of Comacchio (NE Italy) due to environmental and management factors

The Valli di Comacchio (hereafter VdC) form the largest (about 8000 ha) lagoon system in the Po Delta and one of the largest in Italy. VdC has been an area of important economic activity for fishing, particularly eel and mullets. However, over the last 50-60 years, VdC has suffered heavy anthropogenic impact which has completely changed the aquatic system. Nowadays, while duck hunting remains an important activity that deserves strong local socio-political attention, fishing has a residual value and most of the management is devoted to promoting ecotourism and trying to manage the physical environmental system.

In the late 1970s, the VdC became the most important breeding area for colonial seabirds, hosting one of the most diverse assemblages in the Mediterranean. Up to 9 (11) species of gulls and terns, associated with other waders, Eurasian Spoonbills and Greater Flamingos, breed on flat emerging islets. However, over the last 20-25 years, the situation has changed dramatically: the increase in the number of Yellow-legged Gulls (YLG), then the loss of breeding habitat led to a dramatic loss of biodiversity and a reduction in the number of breeding gulls and terns, with many species not breeding for years.

The Common Tern is a good example of this process, as in the past it was the most common and numerous breeder in the seabird guild. Here, its population has declined from up to 1800 pairs in the 1980-1990s to fewer than 50-100 pairs in recent years. Along with the loss of breeding habitat and competition/predation from YLG, terns and gulls have occupied artificial islands, settling on small structures used by hunters and on artificial islets created as alternative breeding areas.

Xhemal Xherri, Zydjon Vorpsi, Mirjan Topi, Ledi Selgjekaj

Preservation of Natural Environment in Albania (PPNEA), Albania

xh.xherri@ppnea.org, z.vorpsi@ppnea.org

Breeding birds monitoring in KBA Vjose-Narte: Terns

Vjose-Narta Protected Landscape in Albania represents the largest coastal wetland in the country and, together with Divjake – Karavasta National Park, is one of the most important bird areas in the whole Mediterranean Basin. Due to its position and habitat diversity, the area has been constantly pressured by various threats.

PPNEA has been constantly active in the area by collecting data through different monitoring programs, such as breeding birds monitoring, mid-winter count, bird migration count, pelican census, and more. Among other birds, particular emphasis has been placed on monitoring breeding terns, such as the Common Terns, Little Tern, and Gull-billed Tern, by collecting data on their abundance, distribution and threat assessment. Monitoring is carried out in June-July, by different teams counting active nests. During breeding, terns are exposed to enormous threats such as predation (stray cats, dogs, golden jackals, gulls), human disturbance, and flooding. Special studies and specific protective measures are therefore required and must be implemented for successful breeding.

List of participants

Surname and name	Affiliation	E-mail
Amélineau Françoise	ECOBIO (Ecosystèmes, Biodiversité, Evolution), Univ Rennes, CNRS, France	francoise.amelineau@univ-rennes.fr
Atamas Nataliia	Schmalhausen Institute of Zoology, NASU, Ukraine	atamasnataly@gmail.com
Bégassat Océane	ECOBIO (Ecosystèmes, Biodiversité, Evolution), Univ Rennes, CNRS, France	oceane.begassat@etudiant.univ-rennes.fr
Belkadhi Mariem	Department of Evolutionary Zoology and Human Biology, University of Debrecen, Hungary	belkadhi.m@yahoo.com
Betleja Jacek	Department of Natural History, Upper Silesian Museum in Bytom, Poland	betleja@interia.pl
Boughdiri Hela	University of Debrecen, Hungary	hela.boughdiri@gmail.com
Brummer Chrisitian	Landesbund für Vogel- und Naturschutz in Bayern (LBV), Kreisgruppe Landshut, Germany	christianbrummer@gmx.de
Buck Zuzanna	Regional Directorate for Environmental Protection in Katowice, Poland	zuzanna.buck@katowice.rdos.gov.pl
Bzoma Szymon	Waterbird Research Group KULING, Gdynia, Poland	szymbz@poczta.onet.pl
Čamlík Gašpar	Czech Society for Ornithology – South Moravian Branch, Brno, Czech Republic	camlik@birdlife.cz
Čamlikova Tereza	Czech Society for Ornithology – South Moravian Branch, Brno, Czech Republic	jmpcso@birdlife.cz
Czechowski Damian	Regional Directorate for Environmental Protection in Katowice, Poland	damian.czechowski@katowice.rdos.gov.pl
Gagliardi Alessandra	Istituto Oikos ETS – via Crescenzago, Milano, Italy	alessandra.gagliardi@istituto-oikos.org
Galov Ana	Faculty of Science, University of Zagreb, Zagreb, Croatia	ana.galov@biol.pmf.hr

Gołek Marta	University of Wrocław, Wrocław, Poland	martagolek12@gmail.com
Horal David	Czech Society for Ornithology – South Moravian Branch, Brno, Czech Republic	David.Horal@seznam.cz
Iliev Mihail	Bulgarian Society for the Protection of Birds/Birdlife Bulgaria	mihail.iliev@bspb.org
Jędro Magdalena	Slowinski National Park, Smołdzino, Poland	m.jedro@slowinskipn.pl
Kneblova Ivona	Agentura ochrany přírody a krajiny ČR, regionální pracoviště Moravskoslezské, Czech Republic	ivona.kneblova@nature.cz
Kralj Jelena	Institute of Ornithology, Croatian Academy of Sciences and Arts, Zagreb, Croatia	jkralj@hazu.hr
Kusal Bartłomiej	Institute of Systematics and Evolution of Animals, Polish Academy of Sciences, Kraków, Poland	kusal@isez.pan.krakow.pl
Kürten Nathalie	Institute of Avian Research, Wilhelmshaven, Germany	nathalie.kuerten@ifv-vogelwarte.de
Ledwoń Mateusz	Institute of Systematics and Evolution of Animals, Polish Academy of Sciences, Kraków, Poland	Ledwon@isez.pan.krakow.pl
Łożyńska Halszka	Institute of Systematics and Evolution of Animals, Polish Academy of Sciences, Kraków, Poland	halszka.loz@gmail.com
Mikuláš Ivan	Department of Biodiversity Monitoring, Nature Conservation Agency of the Czech Republic, Prague, Czechia	ivan.mikulas@nature.cz
Musil Petr	Faculty of Environmental Sciences, Czech University of Life Sciences, Prague, Czechia	p.musil@post.cz
Poddaniec Marcelina	Royal Society for the Protection of Birds (RSPB) Wales, Anglesey, UK	marcela.poddaniec@gmail.com
Rohová Kateřina	Department of Biodiversity Monitoring, Nature Conservation Agency of the	katerina.rohova@nature.cz

	Czech Republic, Prague, Czechia	
Skorb Karolina	Institute of Systematics and Evolution of Animals, Polish Academy of Sciences, Poland	skorb@isez.pan.krakow.pl
Skowron Anna	Regional Directorate for Environmental Protection in Katowice, Poland	anna.skowron@katowice.rdos.gov.pl
Skrzypiec Przemysław	Regional Directorate for Environmental Protection in Katowice, Poland	przemyslaw.skrzypiec@katowice.rdos.gov.pl
Sułkowska Iga	Regional Directorate for Environmental Protection in Katowice, Poland	iga.sułkowska@katowice.rdos.gov.pl
Szlęzak Michał	Regional Directorate for Environmental Protection in Katowice, Poland	michał.szlezak@katowice.rdos.gov.pl
Szwagierczak Aleksandra	Landesbund für Vogel- und Naturschutz in Bayern (LBV), Kreisgruppe Landshut, Germany	aleksandra.szwagierczak@yahoo.com
Volponi Stefano	Istituto Superiore per la Protezione e la Ricerca Ambientale (ISPRA), Italy	stefano.volponi@isprambiente.it
Vorpsi Zydjon	Preservation of Natural Environment in Albania (PPNEA), Albania	z.vorpsi@ppnea.org
Xherri Xhemal	Preservation of Natural Environment in Albania (PPNEA), Albania	xh.xherri@ppnea.org