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CONTRIBUTION TO THE RESEARCH OF THE AVIFAUNA IN THE LITTORAL ZONE OF THE BULGARIAN BLACK SEA REGION

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Introduction

The coastal zones are of prime importance for the wildlife. They are one of the most dynamic and productive ecosystems in the world, holding great both economical and ecological values. Because of their rich resources, they are crucial for the survival of many migrating and breeding birds.

Different coastal habitats like sandy and gravel beaches, dunes, sea cliffs are being actively used by the birds in all parts of their life cycles.

However, many sites along the Bulgarian Black sea coast are deteriorating fast and are undergoing extensive habitat loss. This is result mainly of the high anthropogenic pressure on the area. A wide variety of human activities are affecting bird’s foraging, roosting and breeding. There is uncontrolled loss of land to urbanization, increase in the building of new hotels, resorts and other infrastructure. The touristic season in which there is constant people’s presence on most of the beaches overlaps with the breeding season of birds, leading to disturbance in this important period. Human disturbance is also known to have negative effect on birds at their migration staging areas. Important part of the problem is that it leads to birds redirecting their time and energy from other activities, which may affect their survival probabilities,

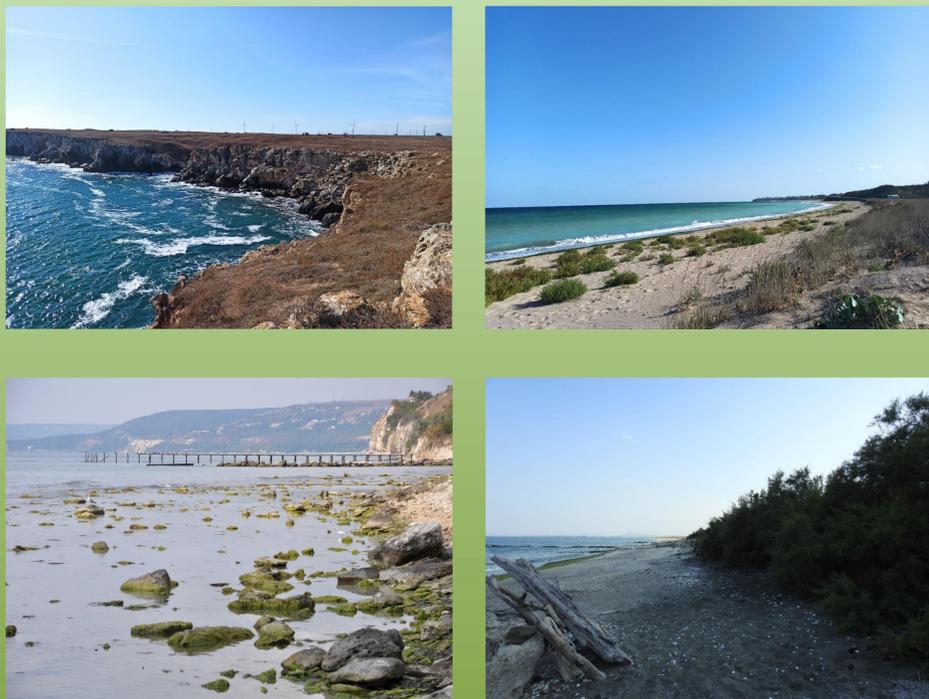
Another interacting factors including light pollution and climate change may also have important effect over bird’s behavior, use of habitats and species composition in certain areas.

Currently the ecological value of the coastline is broadly recognized and there are numerous policies regarding it’s protection. Still, to be more effective, the protective measures and the measures for restoration need to be based on more solid knowledge at local scale. We still lack important data on bird’s habitat use and how it changes with the growing disturbance. The current research aims to fill at least a part of this knowledge gap.



Picture 1. Sand martin (*Riparia riparia*) colony

Most of the data gathered during this field research is confirmatory and will be used for statistical analysis in the long term. We identified 89 bird species. The breeding species are discussed in previous article by the team. For all birds, we collected data about distribution, behavior, intraspecific and interspecific interactions, usage of habitat.



Picture 2. Different habitats along the Bulgarian Black Sea shore.

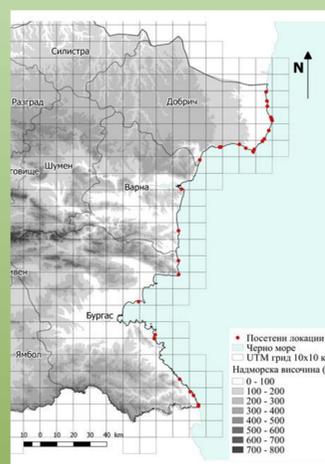


Figure 1. Map of the studied area



Picture 3. Gulls following fisher vessel and feeding with the leftover fish.

Most typical species during all seasons included the yellow-legged gull (*Larus michahelis*) and the black-headed gull (*Chroicocephalus ridibundus*), which were often observed to be following fisher vessels and using them for easier feeding. Great cormorants (*Phalacrocorax carbo*) also explicit this strategy, but they are counting on what the gulls miss. From the waders most abundant was the little ringed plover (*Charadrius dubius*). During migration the species composition changes, with more waders using the littoral area. One of the most abundand species in this period is the white wagtail (*Motacilla alba*).

Methods, results and discussion

We conducted a survey of the coastal birds along the littoral area of the Bulgarian Black Sea coast and the habitats included within the 200 m zone from the shoreline. The studies have been made over the spring, summer and autumn of 2020. This work is continuing older research by the team in the same area, so we visited the same 35 locations. Line transects and point counts were conducted in different types of habitats, including coastal cliffs, sand and gravel beaches, dunes. The surrounding grasslands, shrublands, forests and agroecosystems were also evaluated. The transects were made by the observers between 6 a.m. and 11 a.m. and also after 5 p.m. until dusk. All encountered birds were listed and counted. Automated recording devices were also used in this study for gathering acoustic data. These devises have important role in wildlife research, because they can produce better quantity and quality of data and can surpass some of the human observer’s limitations.



Picture 4. Dunlins (*Calidris alpina*), common ringed plover (*Charadrius hiaticula*) and Eurasian oystercatcher (*Haematopus ostralegus*) feeding and resting along the shore.

Acknowledgement

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