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**ANALYSIS OF RESEARCH ON THE ORNITHOFAUNA OF NATURAL AND CULTURAL LANDSCAPES IN THE WORLD AND UZBEKISTAN****B.N. Doniyorov**

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email: [b.n.doniyorov13.05.1984@mail.ru](mailto:b.n.doniyorov13.05.1984@mail.ru)<https://doi.org/10.5281/zenodo.20204212>**Annotation:**

This article analyzes scientific research devoted to the study of ornithofauna at the global level, within CIS countries, and across Uzbekistan. It highlights the ecological functions of birds in ecosystems, their migratory routes, population dynamics in anthropogenic landscapes, and conservation strategies. Works by international scholars, including field guides, systematic descriptions, and ecological studies, have provided methodological foundations for the development of ornithology in Uzbekistan. Since the early nineteenth century, ornithofauna has been studied in Uzbekistan, and in recent years significant results have been achieved regarding the biology, ecology, and seasonal movements of birds in agrocenoses, urbanized areas, and aquatic habitats.

**Keywords**

Uzbekistan, ornithofauna, birds, ornithology, migration, biodiversity, ecology.

**Introduction**

Birds, as an integral component of nature, fulfill essential ecological functions within ecosystems. They regulate pest populations, disperse seeds, and maintain balance in trophic chains. The study of ornithofauna is therefore crucial not only for the preservation of biodiversity but also for assessing the impact of anthropogenic factors, improving ecological monitoring systems, and developing effective conservation strategies.

At the global level, ornithological research has focused on long-term monitoring, the identification of migratory routes, the evaluation of climate change impacts, and the protection of endangered species. In particular, studies conducted in Europe, North America, and Asia have examined how human activities influence bird populations across both natural and cultural landscapes.

In Uzbekistan, ornithological investigations have intensified significantly over the past decade. Research has yielded important findings on the biological characteristics of resident and migratory bird species, their adaptation to habitats, and their ecological status within cultural landscapes. Special attention has been devoted to changes in avian communities in agricultural fields, urbanized areas, and industrial zones, where birds are increasingly recognized as valuable ecological indicators. These directions highlight the relevance of ornithofaunal studies as a vital scientific field in the context of environmental sustainability and biodiversity conservation.

**Research Methodology**

The research methodology was based on the application of scientific analysis and statistical techniques. Analytical approaches were employed to evaluate ornithofaunal data within natural and cultural landscapes, while statistical methods were utilized to identify patterns, measure variability, and ensure the reliability of results. This combination of qualitative and quantitative tools provided a comprehensive framework for assessing ecological processes and anthropogenic impacts on bird communities.

**Results and Discussion**

Globally, ornithological research on the distribution, diversity, and conservation of birds across landscapes has been extensively documented by leading scholars. For instance, Carol and

Tim Inskipp (1991) produced field guides for the Indian subcontinent, serving as essential references for bird identification and conservation. Salim Ali and Dillon Ripley (1995) authored the monumental *Handbook of the Birds of India and Pakistan*, systematically describing over 1,200 species, their habitats, migration patterns, and ecological roles. Colin Harrison and Peter Castell (2002) developed visual identification tools and distribution maps for European and Asian birds, focusing on morphological adaptations. Jeffrey V. Wells (2007) analyzed biodiversity shifts under global climate change, proposing strategies for migratory species conservation. Catchpole and Slater (2008) examined avian song and behavior, highlighting acoustic adaptation to habitats, while Mark Brazil (2009) emphasized the protection of rare and endemic species in East Asia. Fraser and Gray (2013) contributed ecological and systematic analyses of Australian birds, enriching knowledge on landscape-level distribution dynamics. Collectively, these works provide a robust theoretical and methodological foundation for ornithofaunal studies worldwide.

In the Commonwealth of Independent States (CIS), comprehensive studies have addressed both theoretical and applied aspects of avian ecology. Early contributions by Menzbir (1918), Novikov (1953), Sokolov, Gilyarov, Polyanskiy, and colleagues (1986), as well as Ilichev, Kartashev, and Shilov (1982), examined general distribution and ecological characteristics of bird fauna. Subsequent research by Mixeyev (1960), Stepanyan (1983), and Galushin et al. (1991) advanced ornithological knowledge in biology, ecology, and systematics. Region-specific investigations include Dementev (1952) and Rustamov (1958) on Turkmenistan, Dolgushin (1960) and Kovshar (1966) on Kazakhstan, and Abdusalyamov (1971) on Tajikistan, each contributing valuable insights into local ornithofauna.

In Uzbekistan, ornithological research dates back to the early 19th century. E.A. Eversman (1820–1821) documented 54 bird species in western Kyzylkum, five of which were newly described. N.A. Zarudniy (1912) published *The Birds of the Kyzylkum Desert*, detailing 230 species. Later studies by Bakayev (1994) focused on avifauna in arid anthropogenic landscapes, while Mitropolskiy and Mitropolskiy (2009) compiled a checklist of Uzbekistan's birds. Ametov (2010) investigated nesting birds in agrarian landscapes of Karakalpakstan, followed by Jumanov, Ametov, Matekova, Arepbayev, and Tleumuratov (2017) on rare species in the region. Recent contributions include Turayev (2017) on migratory birds in desert water bodies, Shernazarov and Jumayev (2019) on urban aquatic ornithofauna, and Baqoyev and Doniyorov (2020–2025) on swallows, wintering birds, and agrocenosis avifauna in the Bukhara oasis. These studies collectively highlight the ecological roles, adaptations, and conservation needs of birds in Uzbekistan's diverse landscapes.

### Conclusion

This article provides a concise analysis of ornithological research conducted at the global, regional, and national levels, with particular emphasis on Uzbekistan. The review demonstrates that, worldwide, ornithology plays a crucial role in maintaining ecological balance, monitoring biodiversity, and developing conservation strategies. In the Commonwealth of Independent States, research has largely focused on regional faunal diversity, migratory patterns, and the influence of anthropogenic factors.

In Uzbekistan, ornithological studies have gained remarkable momentum in recent years, producing significant findings on the ecological characteristics of local bird species, their habitat adaptations, and seasonal movements. Special attention has been devoted to the dynamics of bird populations in anthropogenic landscapes, the monitoring of wintering and migratory species, and the identification of endangered taxa.

Overall, the analyses presented in this article highlight the modern directions of ornithological science, providing a solid foundation for deeper exploration of Uzbekistan's ornithofauna and for ensuring ecological sustainability. Future priorities include the establishment of comprehensive monitoring systems, strengthening international collaboration, and engaging young researchers in advancing ornithological studies."\*

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