

STATEMENT

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About the competition for the academic position „Associate Professor” in the professional area 4.3. *Biological Sciences (Ecology and protection of ecosystems)*, announced by IBER - BAS, State Gazette № 38/28.04.2023

The competition has been announced for the needs of the "Biomonitoring and ecological risk" section, "Ecosystem studies, ecological risk and conservation biology" department, IBER-BAS. In the announced competition the only candidate is Dr. Koshev, who presented all the necessary documents precisely prepared.

Dr. Koshev graduated from Sofia University "St. Kliment Ohridski" in 2003 with a master's degree in Biology with a diploma thesis on the topic "Dynamics of the spatial structure of a population of small rodents in the area of a reserve "Beglika" (Western Rhodopes, Bulgaria)" to the Department of Zoology and Anthropology. His career growth began with his starting a job in 2001 at IBER - BAS. Here he gradually went through various positions starting from laboratory assistant, then biologist in the "Terriology" laboratory in the "Biology and Ecology of Terrestrial Animals" section, Assistant Prof. and Chief Assistant Prof. in the Biomonitoring and Ecological Risk Section, Department of Ecosystem Studies, Ecological Risk and Conservation Biology, where he continues to work there until now. He has 23 years and 5 months of experience in the specialty. In 2012, Yordan Koshev successfully defended his PhD thesis on "Ecological and ethological characterization of the European Ground Squirrel (*Spermophilus citellus* L. 1766) in model colonies in Bulgaria" and obtained the scientific and educational degree Doctor. The European Ground Squirrel became the main object of his scientific research.

In the current competition, Chief Assistant Prof. Koshev participated with 30 scientific papers, including scientific publications and book chapters. For the most part, the presented publications are in a team, usually with three or four co-authors, and most often the candidate is in first and second place, which proves his leading role in scientific research. Dr. Koshev also has two independent publications.

The fulfilment of the minimum national requirements for holding the position of "Associate Professor" is as follows:

The indicator from group "A" is fulfilled (50 points).

The indicators from group "B" bring the candidate 117 points, out of the required 100.

Here are included 6 publications indexed in WoS or Scopus with the following quartiles: 2 research papers with Q1 and Q2 published in the prestigious scientific journals *Diversity*, *Mammalian Biology*, *Nature Conservation*, *Biodiversity Data Journal* and one publication each with Q3 and Q4 in *Acta Zoologica Bulgarica*. The prestigious nature of the mentioned editions is proof of the significance of the candidate's scientific research.

According to group "Г" indicators, Ch. assistant Prof. Koshev has presented publications for 374 points out of the required 200, distributed as follows: publications (Г 7) - 220 points: 3 publications in Q1, 4 in Q2, 3 in Q3 and 2 in Q4 in prestigious scientific

journals such as *Molecular Ecology*, *Mammalian Biology*, *North-Western Journal of Zoology*, *Journal for Nature Conservation*, and published book chapters (Г8) - 150 points including *Alien species in Bulgaria: Policy, projects, research and awareness raising in "First ESENIAS Report: State of the Art of Invasive Alien Species in South-Eastern Europe"*, separate publications on invasive alien species in the *Atlas of Invasive Alien Species of European Union concern*.

According to the indicator "Д", the candidate has 200 points. The high citation of his scientific works in prestigious scientific journals such as *Zoo Biology*, *Biodiversity and Conservation*, *European Journal of Wildlife Research*, refereed and indexed in world-famous databases with scientific information (Web of Science and Scopus) confirms the importance of his scientific research, as well as the relevance of the direction in which he works. It should also be noted that the majority of citations are to scientific papers in which the candidate is the first or second co-author. Dr. Yordan Koshev's Scopus H-index is 5 (92 citations of Scopus publications). Accordingly, the Web of Science H-index is also 5 (80 citations of WoS publications).

According to the indicators from group "E", Chief Assistant Prof. Koshev performs 373 points. He has one successfully defended PhD student, 18 participations in national scientific or educational projects as well as one participation in an international scientific project under the Horizon Program of the EC. In addition, Chief Assistant Prof. Yordan Koshev was the head of two national and two international projects, mainly aimed at the protection of the European Ground Squirrel.

Main research areas of the candidate and scientific contributions

Dr. Koshev's main scientific interests are related to the study of the ecology and conservation of small mammals, mainly *S. citellus*, by applying multidisciplinary methods to study the adaptation during translocation of individuals, as well as studying and analysis of protected areas of Natura 2000, mortality of mammals caused by traffic and others. Another focus of the candidate's research is investigating the spread of invasive alien mammal species and their impact on biodiversity. The specified interests determine the main research areas in the candidate's work: 1. The adaptation of *S. citellus* during translocation of individuals with a nature protection purpose; 2. Applied conservation biology with an overview of conservation translocations of *S. citellus* 3. Phylogeographic, molecular genetic and cytogenetic studies of *S. citellus* in support of conservation biology 4. Study and management of two protected areas of Natura 2000 with emphasis on *S. citellus*. 5. Study of the behavior and interspecific relationships of *S. citellus* 6. Small mammals (Micromammalia) - model objects for ecological studies.

Research in these directions provides depth in the understanding of the mechanisms of behavioral and physiological adaptation of the European Ground Squirrel after conservation translocation and allows specific recommendations to be made regarding *S. citellus* translocation activities related to the selection of individuals, monitoring and habitat management. For the first time in our country, a radio telemetric study of the spatial behavior of a small mammal was carried out, which allows to determine the size of the territories, which is especially important when planning future translocations. In order to elucidate the phylogeography of the species a study of genetic diversity and variability of *S. citellus* throughout its range was carried out, which is very important for its conservation and management. It is established that the population inhabiting the territory of today's Bulgaria is a center of speciation and has the greatest genetic diversity. In order to protect biological diversity, a detailed study of two protected areas under the Birds Directive – "Ponor" and

"Bessapar hills" was also carried out with regard to small mammals (Mammalia: Erinaceomorpha, Soricomorpha, Rodentia and Lagomorpha) and the results were used for specific environmental protection recommendations for the protection of species and habitats in protected areas and as a scientific basis for the preparation of an Action Plan for the conservation of the *S. citellus* in Bulgaria "2022–2031". His research has also expanded knowledge of interactions of *S. citellus* with other species, which is of key importance in the selection of places to release individuals. Part of the candidate's research deepens knowledge of the extent to which traffic affects the mortality of amphibians, reptiles, birds and mammals on highways.

As is well known, one of the main reasons for the loss of the world's biological diversity is the entry of invasive alien species into new atypical ecosystems. In this regard, many of Dr. Koshev's contributions are aimed at studying the ecology and behavior of such species of mammals, and recently the candidate's efforts have been focused on the breeding of American mink (*Neovison vison*) in our country and the risks associated with this breeding. The study provides a scientific basis and motive for changing the legislation in this area and taking measures for the spread of the invasive species in our country. In a series of book chapters, the state of invasive alien species in Bulgaria is examined and an analysis of the possible routes for the entry of 9 species of mammals into our country is made. Studies of the spread and negative impact of invasive alien species mammals in Bulgaria have important scientific and applied importance for the development of national documents, management plans and strategies for limiting the spread and countering the introduction of invasive alien species.

The competition materials also present a list of participation in 30 international and national scientific forums, including the *European Ground Squirrel Meeting*, *International Colloquium on Squirrels*, *Rodens et Spatium Conference*, *International Dormice Conference*, *Joint ESENIAS and DIAS Scientific Conference*, *Conference "Evolution and Ecology*, *National Conference of Reintroduction of Conservation of Significant Species*. Participation in these prestigious scientific forums completes the image of his high research achievements and activities. To this we need to add his active participation independently and in a collective in the preparation of scientifically popular articles and materials - On the impact of ski tourism on biodiversity, on the European Ground Squirrel – is it a vulnerable or endangered species in Bulgaria, on the management of invasive alien species of vertebrates from importance for the European Union. Through lectures, media appearances and trainings, Dr. Koshev familiarizes the public with current issues of our time, such as those related to how the change of time affects the circadian rhythms of animals, as well as the farms for valuable furs in Bulgaria and the fate of the mink, with the European Ground Squirrel and its reintroduction.

The professional skills of Chief Assistant Prof. Koshev are also evident from his project and expert activity. Dr. Koshev has led 6 scientific projects. Besides, he participated in the implementation of 18 scientific or educational projects, all in the field of the competition. Part of the projects are financed by Bulgarian National Science Fund, Ministry of Education and Science, Ministry of Environment and Water, EMEPA (PUDOOS), Sofia Municipality, and another part from external sources - the LIFE program of the European Union, Whitley Laing Foundation for International Nature Conservation.

Ch. assistant Prof. Yordan Koshev has an active expert activity. He participated in the preparation of plans for the management of protected areas and expertise, reports on invasive alien species, projects for the protection of the European Ground Squirrel, etc. His

participation in various expert groups is enviable - Advisory Council to the *Vitosha Nature Park Directorate*, Interdepartmental working group for the preparation of a National Report on the State and Protection of the Environment in 2020 and 2021. From 2022, he is already a Member of the National Council for Biological Diversity. Dr. Koshev is a member of the editorial board of the journals *Land* and *Wildlife and Biodiversity*, as well as a reviewer of many prestigious journals such as *Mammalian species*, *Mammalian biology*, *Journal of Nature Conservation*, *Applied Sciences*, *Journal Vertebrate Biology*, etc. He is a member of the professional organizations *East and South European Network on Invasive Alien Species* (ESENSIAS) and *Discover the mammals* of Europe.

Conclusion

Dr. Yordan Koshev's scientific contributions to conservation biology, molecular ecology and biodiversity, small mammal ecology and behavior, the recognition of colleagues at home and abroad and my personal impressions of him as an aspiring scientist and expert who with desire seeks to pass on his experience to younger colleagues give me a reason to express my positive opinion regarding his candidacy for the academic position of "Associate professor". As a member of the Scientific Jury for the announced competition, I recommend the members of the esteemed Scientific Council of IBEL-BAS to vote positively for the election of Ch. Assistant Professor Yordan Spasov Koshev, PhD, in the academic position of "Associate Professor" in professional field 4.3. *Biological sciences*, "*Ecology and ecosystem protection*" specialty.

Prepared the statement:

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