СОФИЙСКИ УНИВЕРСИТЕТ
СВ. КЛИМЕНТ ОХРИДСКИ

БИОЛОГИЧЕСКИ ФАКУЛТЕТ
СОФИЙСКИ УНИВЕРСИТЕТ

REVIEW

From: Assoc.Prof. Dr. Violin Stoyanov Raykov,

Institute of Oceanology "Fridtjof Nansen" at BAS, Varna

4.Natural Sciences, Mathematics and Informatics,

Professional field: 4.3 Biological sciences,

the scientific specialty "Ecology and Ecosystem Conservation",

scientific area "Ecology of marine fauna",

appointed member of the scientific jury.

Subject:

Conducting a competition for an academic position "**Professor",**

field of higher education:

4.Natural Sciences, Mathematics and Informatics,

Professional field: 4.3 Biological sciences,

Hydrobiology (ichthyology, aquaculture)

at Sofia University, University of Biology,

Department of General and Applied Hydrobiology

1.Information about the competition

1.1. The competition is announced for the needs of St. "Kliment Ohridski" University of Biology, in SG issue 82 of 14.10.2022.

1.2. I participate in the scientific jury for the competition according to the Order № RD-38-611/15.11.2022 of the Rector of Sofia University "St.Kliment Ohridski".

2. Information about the candidates in the competition

Assoc. Prof. Dr. Elitsa Petrova Uzunova has a diverse CV, which testifies to her long scientific and teaching experience.

She graduated from the Master's program at Sofia University "St. Kliment Ohridski", BF, in 1994. She specialized in "Fish Farming and Ichthyology", and in 1996 she became an Assistant Professor at BF, at the Department of "General and Applied Hydrobiology". In 2004, she received her Ph.D. degree with a dissertation topic: “Effect of heat shock on ploidy, survival and sexual maturity of Brook trout (*Salvelinus fontinalis*)”. Assoc. Prof. Elitsa Uzunova followed her long academic path in the Faculty of Biology from student through junior assistant to senior Assistant Professor and so since 2013, she has occupied the high academic position of Associate Professor, which is her current position.

The main expertise of the candidate's scientific work is in the following areas: Ichthyology, Hydrobiology, Biodiversity, Aquatic Ecosystem Ecology.

Her expertise is gathered in several areas:

- The development of compatibility assessments of plans, projects and investment programs significantly affecting Natura 2000 sites;
- Conducting research on the taxonomy, ecology and distribution of freshwater fishes in standing and flowing waters;
- Management and monitoring of protected fish species;
- Conducting field surveys of the ichthyofauna and analysis of collected field data;

Assoc. Prof. Uzunova actively participates in scientific councils and scientific expert committees since 1998. She has rich experience as a reviewer and author of opinions in competitions for PhD, Associate Professor and Professor.

She is a member of international and national professional scientific associations, federations and societies, such as: Union of Bulgarian Biologists, European Ichthyological Society and Fisheries Society of the British Isles.

3. Fulfillment of the requirements for the academic position "Professor"

3.1. Candidate's documents

The set of materials submitted by Assoc. Prof. Dr. Uzunova on electronic media is in accordance with the Regulations for the Development of the Academic Staff of Sofia University and includes the following documents:

- Application for admission to competition
- CV;
- Copy of the diploma of higher education (Master's degree);
- Copy of the doctoral diploma and its annexes;
- Copy of the Associate Professor diploma and its annexes;
- Habilitation thesis - one monograph and summary;
- Certificate of work experience in the specific field;
- Certificate of participation in scientific projects;
- Reference for fulfilling the minimum national requirements;
- Reference for original scientific contributions;
- List of scientific publications;
- List of citations.

3.2. The candidate has fulfilled all of the specified requirements in Annex 8.1 and has met the minimum national requirements under Article 2b of the RRBA for the academic position of "Professor" as follows:

(Total number of points for each group of indicators is presented)

Group of indicators A - 50 pts.

Group of indicators B - 100 pts.

Group of indicators G- 346 pts.

Group of indicators D - 324 pts.

Group of indicators E - 557 pts.

*There are no unfulfilled requirements under Annex 8.1.

4. Evaluation of teaching activities

In parallel with the long-standing academic growth and active scientific work, the teaching activity also goes hand in hand - Assoc. Prof. Uzunova is a lecturer of undergraduate and graduate lecture courses in "Applied Hydrobiology", "Aquaculture" and "Ichthyology", as well as a supervisor of student workshops. She has 27 years of teaching experience behind her, which continues to accumulate to this day. She has a record of successfully defending graduates and PhD students.The candidate's extensive CV, together with her full experience as a lecturer are more than sufficient basis for her further career progress. The candidate's teaching experience is highly valued according to the specific requirements of the competition for the higher academic position of "Professor".

5. General characteristics of the presented scientific works and publications

The scientific works submitted for review are in the scientific field of the competition for the academic position of "Professor" in Hydrobiology (Ichthyology and Aquaculture) and can be systematized in the following main research topics:

1) foreign and invasive fish species;

2) approaches to restoring river connectivity;

3) rare and endangered fish species;

4) aquaculture;

5.1 The main areas of research activity

In the submitted scientific work for the competition a number of original, scientifically theoretical, scientifically applied and confirmatory contributions are made, classified in the following five areas:

Field 1 General and Applied Hydrobiology;

Field 2 Ichthyology;

Field 3 Aquacultures;

Field 4 Ecology and conservation of aquatic ecosystems;

Field 5 Conservation and sustainable use of fishery resources;

5.2 The scientific and/or applied results obtained are summarized

1. For the first time in Bulgaria, ex situ breeding and propagation of European bullhead has been realized.
2. All stages of egg incubation, hatching and feeding of larvae, rearing of adult fish are described in detail.
3. A multi-criteria algorithm is presented for the first time, offering a scientific basis for decision making related to the introduction/re-introduction of the bullheads.
4. Potential threats (of anthropogenic and natural origin) to each individual locality of *Cottus gobio* and *Cottus haemusi* are identified.
5. The age determination of Peipsi whitefish (*C. maraenoides*) is most accurately determined by analysis of ventral ray's sections and this method is recommended for biological surveys and/or the preparation of fish management plans for Iskar Dam.
6. Recommendations have been formulated to limit the spread of largemouth bass and are directed for implementation to the institution controlling fisheries and fish farming activities in the country (the Executive Agency for Fisheries and Aquaculture).
7. A list of 46 invasive foreign animal species of EU concern has been published, containing information and original data for Bulgaria.
8. Developed a 32 language decision support tool (software application) on aquatic invasive species (AS-ISK).
9. Assessment of the combined impacts of hydropower on ecosystems and ecological status of rivers.

10. A methodology has been developed for an informed, transparent and objective assessment of the eligibility for the construction of new hydropower plants, which has not yet been developed in the country, taking into account the ecological sensitivity of river ecosystems.

11. A manual has been prepared that proposes a comprehensive approach to the restoration of river continuity.
12. A complex analysis (hydrobiological, hydrological, hydro-engineering) has been prepared for a key hydro-technical facility in the Iskar River for fish migration and a project has been developed for the improvement of its functionality.
13. For the first time in Bulgaria a non-lethal and micro-invasive approach was applied in the study of fish nutrition.
14. A significant part of the previously published data on the species diversity, origin, biology, breeding and conservation of one of the most economically valuable fishes in the world - salmonids (family Salmonidae) - has been systematized.
15.An original methodology for determining the locations, quantities and methods of restocking salmonids is proposed.
16. The results of attempts for acclimatization of new fish species for the purpose of aquaculture and recreational fishery in our country are discussed in a historical aspect.
17.Contribution to academic education is the development of "Practical manual for exercises in ichthyology: microinvasive methods for field and laboratory studies of fish" (co-authored with Petya Ivanova and Dimitri Dashinov) for students of all biological specialties studying zoology, ichthyology, aquaculture and other disciplines.

5.3 Characteristics of the scientific works and publications

For participation in the competition the candidate has submitted 72 fully published scientific papers, of which:

1.Scientific publications in journals that are refereed and indexed in world-renowned databases of scientific information (WEB OF SCIENCE and SCOPUS)- **34 pcs;**

2. Scientific publications in international journals WITHOUT an Impact Factor (IF) or Impact Rank (SJR) in the respective year - **16 pcs;**

3. Papers published in full text and presented at scientific forums - **8 pcs;**

4. Books, book chapters, monographs - **12 in total;**

- Monographs - **2 pcs;**

- Books and book chapters - **10 pcs;**

- Practical manual for exercises in ichthyology:"Micro-invasive methods for field and laboratory studies of fishes" ("St. Kliment Ohridski" University Press, 111 pgs.)

5. Participation in scientific forums (conferences, symposia):

-International - **34**

-National - **13**

Total number of citations – 162

RESEARCH PUBLICATIONS - **a total of 27** on the relevant indicators**:**

● INDICATOR A

Dissertation for the award of educational and scientific degree "Doctor"

● INDICATOR B3

Habilitation thesis - Monograph

● INDICATOR G7

Scientific publications in journals that are refereed and indexed in world-known databases of scientific information (WEB OF SCIENCE and SCOPUS), outside the habilitation thesis - **13 pcs;**

● Publications with more than 30 co-authors, not included in the lists of publications of Assoc. Prof. Dr. Elitsa Uzunova for fulfilling the criteria of the ZPAS, but considered in the scientific contributions - **4 pcs;**

● INDICATOR G8

Published chapter of a book or collective monograph (including books) - **7 pcs;**

● INDICATOR E19

Published university textbook or textbook used in school network - **1 pcs.**

No plagiarism has been legally established in the scientific works, publications and teaching materials submitted for the competition.

5.4. Assessment of the candidate's monographs

Two monographs were submitted for the competition:

1. B3.1 Uzunova E., 2022. "Genus Cottus in Bulgaria - distribution, conservation status, perservation ("St.Kliment Ohridski" University Press, Sofia), 149 p., ISBN 978-954-07-5489-5 (B3 **- 100 pcs.**) Habilitated work.

2. D5.1 Uzunova E., 2020."Aquaculture.Trout fish."("St. Kliment Ohridski" University Press, Sofia), 339 p., ISBN 978-954-07-5014-9 (D5**- 30 pcs.**)
Non-habilitated work.

Brief summaries of the monographs are applied to the papers, scientific contributions are highlighted.

5.5. Evaluation of scientific and applied contributions

The scientific research developments in the period up to the habilitation as Associate Professor are of similar scientific problems and most of the scientific works submitted in the present competition appear to build on the above-mentioned areas. The upgrading has been done by introducing new research methods, expanding the range of species studied, applying a multidisciplinary approach in solving the different research problems. The author's summary outlines the main scientific, applied and methodological contributions. Based on the analysis of the materials provided, it can be concluded that the scientific and applied contributions of the candidate in the identified field are current and significant, leading to new knowledge and expanding the existing knowledge in the field.

The mentioned above gives me reason to assess Assoc. Prof. Elitsa Uzunova as a successful and competent scientist and lecturer.

6. Critical notes and recommendations

I have no significant criticisms towards the competition materials and the candidate's scientific works. I highly recommend Assoc. Prof. Elitsa Uzunova to pass on her experience and knowledge to more PhD and undergraduate students who will participate in the scientific research work in Ichthyology and Aquaculture.

7. Conclusion

After reviewing thoroughly the materials and scientific works submitted in the competition and based on the analysis of their significance and the scientific and applied contributions contained therein, I confirm that the scientific achievements meet the requirements of the competition, the regulations for its application and the relevant regulations of Sofia University, Faculty of Biology, for the candidate to hold the academic position of "**Professor**" in the scientific field and professional field of the competition. In particular, the candidate Assoc. Prof. Elitsa Uzunova fulfils the minimum national requirements in the desired professional field.

The above facts satisfy the basic and specific requirements of the competition. I give my positive evaluation to her application and recommend to the esteemed committee that the candidate should successfully proceed to the academic position of "Professor".

Date / Place

03.02.2023,Varna

Signature:

Assoc.Prof.Dr.Violin Raykov