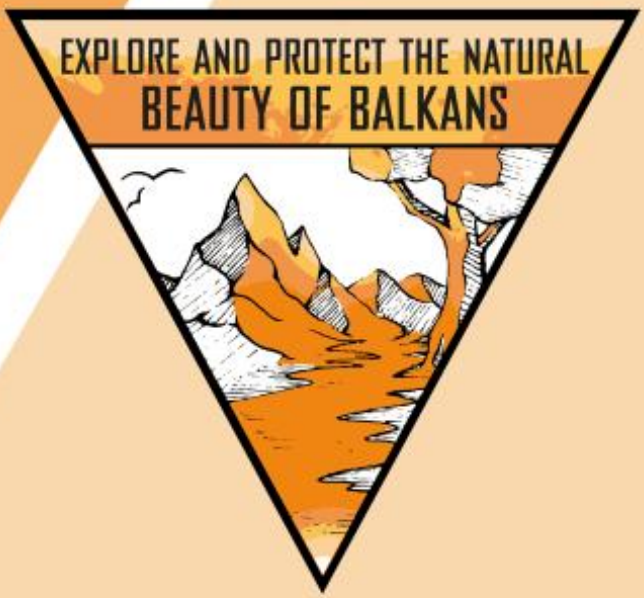

International Rufford Small Grants Conference

27th – 28th September, 2018
Silver Lake, Serbia
Abstract Book

Explore and protect the natural beauty of Balkans

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Hidden dwellers on green frog's skin (*Pelophylax esculenta complex*)

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Recent research of frog skin microbiota were mainly focused on presence of pathogens, especially *Batrachochytrium dendrobatidis*, as well as on describing the bacterial communities on their skin. The specialized amphibian lifestyle where frogs' skin is in intimate contact with the environment is of primary importance in determining frogs' resilience to external factors. Cutaneous microbiota is thus an indicator of both frog health as well as of environmental factors acting upon frogs. Many of these factors can be detrimental to frog fitness and it is expected that the first changes in frog fitness could be assessed by identifying the changes in diversity patterns of frog's skin epibiotic communities and/or isolating specific pathogens. Knowledge of these communities and patterns could contribute to more efficient conservation. Epibiotic communities of the green frog complex (*Pelophylax esculenta complex*), sampled on three localities in South Banat, Serbia (Stevanove Ravnice, Jaruga canal, Danube-Tisa-Danube Canal) were investigated using culture depended methods and microscopy techniques. Samples were collected using three sampling methods: 1) scraping by toothbrush for algal sample 2) swabbing with sterile cotton swabs for fungal sample and 3) nonaggressive adhesive tape method for both algal and fungal sample. The aim of this research was describing fungal and algal communities present on frogs' skin. Culture based methods showed high diversity of air- and soil-borne fungi (members of genera *Acremonium*, *Alternaria*, *Aspergillus*, *Bionectria*, *Bipolaris*, *Botrytis*, *Cladosporim*, *Epicoccum*, *Fusarium*, *Penicillium*, *Trichoderma*, *Ulocladium*, to name a few), which could be considered transients. However, microscopy techniques revealed spore germination, mycelia formation and sporulation directly on frog skin, of some typical soil-borne fungi eg. *Fonseceae* sp., causative agent of amphibian chromomycoses as well as human phaeohyphomycosis. Microscopy analyses of samples taken or scraped from amphibians' skin showed the presence of morphological structures belonging to aeroaquatic hyphomycetes (eg. *Canalisporium* sp.) and stramenopiles, as well as high abundance of diatoms. Presence of c. 40 diatom genera was observed with dominance of mostly ubiquitous eurivalent species found in highly eutrophic waters (members of genera *Amphora*, *Craticula*, *Cymbella*, *Cymbopleura*, *Cymatopleura*, *Diploneis*, *Encyonema*, *Epithemia*, *Fallacia*, *Gomphonema*, *Luticola*, *Navicula*, *Neidium*, *Nitzschia*, *Pinnularia*, *Planothidium*, *Rhopalodia*, *Staurosira* and *Surirella*).

Investigation of microbial communities on frog skin is of great importance due to potential detection of novel amphibian pathogens, and also can lead to better understanding of amphibian-microbial interactions, which in further researches can be used as effective tool in amphibian protection.

Key words: *Pelophylax esculenta complex, epibiotic communities, Serbia*

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