Preliminary results of a biodiversity of Blue-green algae (Cyanobacteria) along the karstic river Cetina (Croatia)

Malešević, Nikola¹, Koletić, Nikola², Mejdandžić, Maja³, Blinkova, Martina¹

¹Institute for Research and Development of Sustainable Ecosystems, Jagodine 2004, Velika Gorica, Croatia
²Botanical Department, Division of Biology, Faculty of Science, University of Zagreb, Rooseveltov trg 6, Croatia
³Institute of biology, Faculty of Natural Sciences and Mathematics, University of Sv. Kril i Metodij, Skopje, Republic of Macedonia

STUDY SITE
Investigation of cyanobacterial diversity and composition was conducted along the river Cetina and artificial reservoir Peruća which has been used for recreation, in the sub mountain Croatia. Samples were collected in August 2012 along the river (~ 35km) on 23 study sites including: spring and main flow of the river Cetina (upstream and downstream from the reservoir Peruća). Fieldwork collection points are marked on an interactive map (P1, P2,...)

RESULTS
A total of 22 taxa were found of which five taxa with toxic properties (Anabaena sp., Lyngbya sp., Microcystis sp., Nostoc sp. and Oscillatoria sp.) have been recorded:

1. Anabaena sp.
2. Chamaesiphon sp.
3. Chroococcus sp.
4. Gloeocapsa sp.
5. Gloeohedra sp.
6. Glophosphaeria sp.
7. Hyella sp.
8. Lyngbya sp.
9. Merismopedia sp.
10. Microcystis sp.
11. Nostoc sp.
12. Oscillatoria sp.
13. Phormidium sp.
14. Planktothrix sp.
15. Pleurocapsa sp.
16. Pseudanabaena sp.
17. Rivularia sp.
18. Scytonema sp.
19. Snowella sp.
20. Spirulina sp.
21. Synechococcus sp.
22. Synechocystis sp.

Physical parameters were recorded along the research sites showed that the pH of the river and the reservoir were similar and ranged from 5.6 to 6.3 units which corresponded to the ecological status of the observed water system due to external factors and a large amount of degraded organic matter with dominance of cyanobacterial taxa in the water column.

CONCLUSION
Research on the river Cetina indicates how this type of habitat operates and it can point out how some similar ecosystems can function. Climate change predictions suggest that over a longer term, changes in weather patterns may increase the cyanobacterial blooms. This in turn may increase the scale of risk to human health by cyanotoxins. Cyanobacteria adapts to environmental physical conditions and the pH is not critical for the species richness.

ACKNOWLEDGEMENTS
Authors want to thank Biology Student Association (BIUS) for supporting field surveys which granted this publication. M.M. has been supported by Croatian Science Foundation under the project 6433.