# Анотации на материалите по
# чл. 65 от ПРАСПУ, самооценка на приносите

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Област на висше образование:
**4. Природни науки, математика и информатика**
Професионално направление:
**4.3. Биологически науки**
Научна специалност:
**Екология и опазване на екосистемите**

## Научни публикации извън представените за научната и образователната степен „доктор”

1. **Mollov I.,** P. Boyadzhiev, A. Donev. 2012. Trophic Niche Breadth and Niche Overlap Between Two Lacertid Lizards (Reptilia: Lacertidae) from South Bulgaria. - *Acta Zoologica Bulgarica,* Suppl. 4: 129-136. **($IF_{2012}$=0.309)**

The seasonal variation of the trophic spectrum of two sympatric lizards (*Lacerta viridis* and *Podarcis tauricus*) is presented as well as the species' trophic niche breadth and niche overlap. The material forthe current study was collected in 1980-1981 in surroundings of Purvomay Town in South Bulgaria. Themain food sources for both lizards are insects. For *P. tauricus* the predominating food type is Orthoptera (44.62%), followed by Coleoptera (14.36%) and Hemiptera (7.18%) and from the diet of *L. viridis* predominatingare again Orthoptera (34.05%), followed by Coleoptera (12.97%) and Hymenoptera (9.73%).The possible ecological aspects of interspecific competition are discussed.

2. Irikov A., **I. Mollov.** 2014. Overseas Dispersal of Shells of Terrestrial Snails (Gastropoda: Pulmonata) on the Bulgarian Black Sea Coast. - *Acta Zoologica Bulgarica,* 66(4): 501-504. **($IF_{2014}$=0.532)**

Six species of terrestrial snails recorded from the Bulgarian Black Sea coast should be considered accidentally transported as shells from overseas to the territory of Bulgaria. Four species were reported by previous authors on the basis of shells found in marine sediments: *Gibbulinopsis interrupta* (Reinhardt,1876) (reported from Bulgaria as *Pupilla bogdanovi* Urbański, 1960, and *Pupilla valkanovi* Urbański,1960, which are recognised as junior synonyms of *G. interrupta* by the present study), *Ena nogellii* (Roth,1850), *Chondrus tournefortianus* (Férussac, 1821), and *Multidentula squalina squalina* (Pfeiffer, 1848). Shells of two other species, *Scrobifera taurica* (Pfeiffer, 1848) and *Elia huebneri* (Pfeiffer, 1848), arereported for the first time from Bulgaria in this paper. There are no records of living specimens of thesespecies from the Bulgarian Black Sea coast, and we believe that the shells were carried by sea currentsand thus reached the Bulgarian seaside. Therefore, these species should not be considered representativesof the fauna of Bulgaria.

3. Yancheva V., **I. Mollov,** E. Georgieva. S. Stoyanova, V. Tsvetanova, I. Velcheva. 2017. Ex situ Effects of Chlorpyrifos on the Lysosomal Membrane Stability and Respiration Rate in Zebra Mussel, *Dreissena polymorpha* (Pallas, 1771). - *Acta Zoologica Bulgarica,* Suppl. 8: 85-90. **($IF_{2016/2017}$: 0.413)**

The present study examines the lysosomal membrane stability in haemocytes of Zebra mussel (*Dreissenapolymorpha*) by applying the neutral red retention assay (NRRA) as well as the respiration rate and survivalunder acute pesticide exposure. The mussels were treated with different concentrations of chlorpyrifos inlaboratory conditions for a total acute exposure period of 72 hours. The pesticide concentrations were preparedas 50 and 30% of the maximum permissible level (100%) set by the national and EU legislation. Wefound that destabilization of the lysosomal membrane stability occurred at all tested concentrations and

therespiration rate was time- and dose-dependent. Overall, we consider that the results from such experimentscan be successfully applied in risk assessment, monitoring programs and water policy, and the use of pesticidessuch as chlorpyrifos should be controlled very cautiously in plant protection and agriculture.

4. Stoyanova S., I. Velcheva, V. Yancheva, **I. Mollov,** E. Georgieva. 2017. Biomarkers for Ex Situ Ni and Pb Exposure in Common Carp (*Cyprinus carpio* L.). - *Acta Zoologica Bulgarica,* Suppl. 8: 163-168. **($IF_{2016/2017}$: 0.413)**

This work aimed to study the effects of heavy metal exposure on the respiration rate and histological structureof common carp (*Cyprinus carpio* L.) gills. Fish were treated with different soluble concentrationsof Ni and Pb in laboratory conditions for a total acute period of 72 hours. The metal concentrations werepreprared as 75, 50 and 25% of the maximum permissible levels (100%) set by law. The results showed a higher index of respiration rate in the fish from all experimental tanks for both metals, compared to thecontrol in the beginning of the experiment, but there was no pattern of increase or decrease in relation tothe metal concentrations. After 72 hours of exposure we observed the same pattern, but in addition therespiration rate of the fish in the tanks treated with Pb showed an increase in a dose-dependent manner.We also observed different histological changes in the gill epithelium, which included proliferative anddegenerative changes, as well as changes in the circulatory system. In addition, the degenerative changeswere more pronounced in the fish, treated with Pb concentrations, and the blood circulatory systemshowed mainly vasodilatation, which caused pathological changes in the gills. In sum, we can concludethat Ni and Pb have severe effects on the respiration rate and gill histology of common carp, even at concentrations,which were lower than the allowable ones.

5. Yancheva V., **I. Mollov,** I. Velcheva S. Stoyanova, K. Todorova, E. Georgieva. 2017. Lysosomal membrane stability and respiration rate in zebra mussel (*Dreissena polymorpha* Pallas, 1771) as biomarkers for ex situ heavy metal exposure. - *Periodicum Biologorum,* 119(4): 229-237. **($IF_{2017}$: 0.21)**

In the current study we aimed to investigate the lysosomal membrane stability in haemocytes of the invasive molluskzebra mussel (*Dreissena polymorpha* Pallas, 1771) by applying the neutralred retention assay (NRRA), as well as changes in the respiration rate andsurvival under acute heavy metal exposure. The mussels were treated with different decreasing concentrations of nickel (Ni) and lead (Pb) in laboratory conditionsfor a total acute period of 72 hours. These metals are considered as priority substances in surface waters according to Directive 2013/39/EU of the European parliament and of the Council amending Directives 2000/60/ECand 2008/105/EC as regards priority substances in the field of water policy. The metal concentrations were prepared as 75, 50 and 25 % of the maximum allowable concentrations (100% MAC) set by law. In sum, after 24 and 72 h we found that thelysosomes in the mussels exposed to all Ni and Pb concentrations, including the ones below the MAC (75 and 50 % from MAC) retained the dye shorter than the accepted minimum of 90 min. In addition, the respiration rate increased in a dose-dependent manner. Overall, we can conclude that the acute metal exposure lead to destabilization of the lysosomal membranestability and changes in the respiration rate of zebra mussel, therefore altered physiological functions. We consider that such experiments could be successfully applied in risk assessment and monitoring programs on metal-contaminated aquatic systems, and the obtained results could be used in the field ofwater policy, respectively.

6. Stoyanova S., V. Yancheva, I. Velcheva, **I. Mollov,** K. Todorova, S. Tomov, V. Tsvetanova, E. Georgieva. 2017. Glyphosate-based herbicide alters the histological structure of gills of two economically important cyprinid species (Common carp, *Cyprinus carpio* and bighead carp, *Aristichthys nobilis)*. - *Applied Ecology And Environmental Research,* 16(3):2295-2305. **($IF_{2017}$: 0.721)**

The present study primarily aims to investigate the histopathological effects which a glyphosate based herbicide could cause on the gills of two economically important Cyprinid fish (common carp and bighead carp), and to determine which species is more sensitive in terms of glyphosate contamination. The pesticide concentrations tested in laboratory conditions were decreasing (72 mg/l, 40 mg/l and 20 mg/l) and prepared by dilution of the stock solution of the commercial product used in plant protection. The experiment was short-term of 96 h. In general, the herbicide caused different pathological alterations in the fish gills such as lamellar lifting, edema, proliferation of the glandular cells and epithelium, covering the gill filament, fusion, vasodilatation of the secondary lamellae and aneurysms. In addition, we observed a tendency towards the enhancement of the gill histological changes which degree of expression was proportional to the increasing pesticide concentrations. However, bighead carp was more sensitive compared to common carp when it comes to the tested chemical and alterations in the gill histological structure were pronounced.

7. Yancheva V., E. Georgieva, S. Stoyanova, V. Tsvetanova, K. Todorova, **I. Mollov,** I. Velcheva. 2018-in press. Short and long-term toxicity of cadmium (Cd) and polyaromatic hydrocarbons (PAHs) on zebra mussel (*Dreissena polymorpha* Pallas, 1771). - *Acta Zoologica Bulgarica,* 70: In Press **($IF_{2016/2017}$: 0.413)**

The main objective in the present experiment was to study the possible negative effects which Cd and PAHs could have on the lysosomal membrane stability in haemocytes of the invasive mollusk zebra mussel (*Dreissena polymorpha*) by applying the neutral red retention assay (NRRA). We found that the short-term and long-term exposure to both toxicants decreased significantly the lysosomal membrane stability of the zebra mussels compared to the control, no matter of the test concentration. In addition, Cd toxicity was more severe compared to PAHs as the Cd exposure led to a lower retention time (NRRT). However, in general there were no significant differences between the retention time of the mussels exposed to Cd and PAHs ($P>0.05$). Overall, we consider that such experiments can be successfully applied in risk assessment and monitoring programs on contaminated aquatic systems with both, metal and organic pollutants, and the obtained results in the field of water policy, respectively.

8. Donev A., **I. Mollov,** M. Kechev. 2005. A contribution to knowledge of the trophic spectrum of three species of lacertid lizards from South Bulgaria. – *Scientific Studies of the University of Plovdiv - Biology, Animalia,* 41: 109-114 (In Bulgarian, English summary). (Цитирана в списание с Impact Factor).

A study on the trophic spectrum of three species of lacertid lizards (*Lacerta agilis, Lacerta viridis* and *Podarcis taurica*) was carried out, based on 32 specimens collected in the period 1959-1968 in various localities in South Bulgaria. The analyzed data showed that the insects (Insecta) are the most numerous and the most frequently met among the alimentary components of the total amount of food of the studied stomachs. The insects consisted 80,0% of the total amount of food of *Lacerta agilis,* 88,8% of *Lacerta viridis* and 72,6% of *Podarcis*

*taurica.* The insects weremainly presented by Coleoptera (*Lacerta agilis* - 40,0%, *Lacerta viridis* – 66,6% and *Podarcis taurica* – 30,2%) followed by Diptera and larvae of Lepidoptera. The non insect components consisted spiders (*Lacerta viridis* - 7,4%, *Podarcis taurica* -16,6%), amphipods (*Podarcis taurica* - 3,1%) and gastropods (*Lacerta agilis* – 20,0%).In our opinion, the variety of the trophic spectrum of each species suggests thatmost likely there isn't strong competition for food between these three species oflizards in their sympatric localities.

9. Zhelev Zh., M. Angelov, **I. Mollov.** 2006. A Study of Some Metric Parameters of the Erythrocytes in *Rana ridibunda* (Amphibia, Anura) Derived from an Area of Highly Developed Chemical Industry. – *Acta Zoologica Bulgarica,* 58(2): 235-244. (Цитирана в списание с Impact Factor).

   Some metric parameters of the erythrocyte (big cell diameter (D-cell), small celldiameter (d-cell), big nuclear diameter (D-nucleus) and small nuclear diameter (d-nucleus)) in the blood of *Rana ridibunda,* inhabiting highly developed chemical industry area, wereestablished. The results were compared with the data from our previous work, carried out in a relatively unpolluted area and another industrial area with different kind of pollution.Considerable variations in cell and nuclear parameters were detected.

10. Velcheva I., A. Arnaudov, G. Gecheva, **I. Mollov.** 2006. A study on some physiological parameters of three hydrobiontic species under the influence of copper. - In: Pešić, V. & Hadžiablahović, S. (Eds.) *Proceedings of the Symposium, II International Symposium of Ecologists of Montenegro.* Kotor, 20-25.09.2006, pp. 155-160. (Цитирана в списание с Impact Factor).

    A study on the effects of five increasing copper concentrations on three hydrobiotic species exsitu was carried out. The individuals of this research are gathered from various habitats of theMaritsa River, from unpolluted ponds. The researched indices are as follow: chlorophyll contentof the aquatic bryophyte species *Amblystegium riparium*; hematological parameters in the bloodsamples of *Carassius auratus gibelio* and *Rana ridibunda,* particularly erythrocite alterations.The current paper commented alterations of the studied parameters depending on the differentcopper concentrations in the solutions. The results could be used and applied in future biomonitoring surveys of copper contaminated aquatic ecosystems.

11. Irikov A., **I. Mollov.** 2006. Terrestrial gastropods (Mollusca: Gastropoda) of the Western Rhodopes (Bulgaria). – In: Beron P. (Ed.), *Biodiversity of Bulgaria 3., Biodiversity of Western Rhodopes (Bulgaria and Greece) I.,* Pensoft & National Museum of Natural History, Sofia, pp. 753-832. (Цитирана в списание с Impact Factor).

    For the first time a synopsis is made of the terrestrial malacofauna of the WesternRhodopes in Bulgaria. There are 106 species and 19 subspecies (111 taxa) of terrestrial snailsannounced as valid for the fauna of the Bulgarian part of the Western Rhodopes Mountain.For the first time 5 new taxa are reported for the fauna of the Rhodopes and 4 new taxa for theBulgarian fauna. As a result of a critical evaluation 24 taxa are considered invalid for the faunaof the Western Rhodopes Mountain. The full contemporary distribution of the terrestrialsnails in the Western Rhodopes is

shown with taxonomical, ecological, zoogeographicalnotes and data concerning the endemism.

12. **Mollov I.** 2009. A New Locality of the Italian Wall Lizard *Podarcis siculus* (Rafinesque-Schmaltz, 1810) from Turkey. - *ZooNotes,* 6: 1-3. (Цитирана в списание с Impact Factor).

    The current paper reviews the current distribution of the Italian Wall Lizard (*Podarcis siculus)* in Turkey. A new locality at Güzelyalı Belediyesi Resort, south-west of Mudanya City in the country is reported.

13. **Mollov I.** 2010. A contribution to the knowledge of the trophic spectrum of the Slow Worm (*Anguis fragilis* L., 1758) (Reptilia: Anguidae) from Bulgaria. - *ZooNotes,* 9: 1-4. (Цитирана в списание с Impact Factor).

During this study 23 prey items in 12 prey categories in the trophic spectrum of *Anguis fragilis* were identified, with average number of prey items per stomach 2.87. The most important prey components are snails and slugs (Gastropoda) with 39.14% and beetles (Coleoptera) with 21.72%. The estimated trophic niche breadth is very high – 19.46. The Slow Worm forages primarily at dawn or twilight, and the feeding is most intensive in the summer season. It can be considered "swallowing" predator and a "polyphage" to some extend, capturing only slowly moving prey.

14. **Mollov I.** 2011. Comparison of the eggs size between two subspecies of the Kotschy's Gecko *Mediodactylus kotschyi* (Steindachner, 1870) (Reptilia: Gekkonidae) in Bulgaria. - *ZooNotes,* 19: 1-4. (Цитирана в списание с Impact Factor).

The current study compares the egg size (length, width, egg volume and clutchsize) between two subspecies of the Kotschy's Gecko – *Mediodactylus kotschyi rumelicus* and*Mediodactylus kotschyi daniliewskii* from Bulgaria. Our results showed that *M. k. rumelicus*from Plovdiv has bigger eggs, compared to *M. k. daniliewskii* from Sozopol, The South BlackSea Coast and Ukraine, regarding length, width and egg volume. The clutch size betweenthe two subspecies both from Bulgaria and Ukraine is very similar and contains average of 2 eggs.

15. **Mollov I.,** S. Petrova. 2013. A contribution to the knowledge of the trophic spectrum of three lacertid lizards from Bulgaria. - *Journal of BioScience and Biotechnology,* 2(1): 57-62. (Цитирана в списание с Impact Factor).

A study on the trophic spectrum of three species of lacertid lizards (*Lacerta agilis,Lacerta trilineata* and *Podarcis muralis)* was carried out, based on 20 specimens collected in the period 1967-1973 in various localities in Bulgaria. The analyzed data showed that the insects (Insecta) are the most numerous and the most frequently met among the alimentary components of the total amount of food ofthe studied stomachs (except for *Lacerta agilis,* where spiders are slightly predominating). The non-insect components consisted spiders and isopods. The largest niche breadth was recorded in *Lacerta trilineata* (8.25), followed by*Podarcis muralis* (5.20) and *Lacerta agilis* (3.44). The niche overlap between thethree species (pair-wise comparison) showed medium values and in our opinion there should not be any serious competition for food resources at the places with sympatric distribution.

16. **Mollov I.,** K. Kirov, S. Petrova, D. Georgiev, I. Velcheva. 2013. Assessing the Influence of the Automobile Traffic on the Amphibians and Reptiles in the Buffer Zone of Biosphere Reserve "Srebarna" (NE Bulgaria). - *Ecologia Balkanica,* 5(2): 31-39. (Цитирана в списание с Impact Factor).

Currently the problem of the effects of the road network and traffic on the amphibians and reptiles in Bulgaria is poorly studied. During the period March 2002 - March 2004 in the Buffer Zone of Biosphere Reserve "Srebarna" (NE Bulgaria) were built two anti-fire roads from the eastern and western side of the lake in area of grasslands of semi-steppe type, typical for north-eastern Bulgaria. The aim of the constructed roads is to provide access for fire vehicles to areas in and around the reserve. The current study aims to provide data on the impact of road traffic and the newly constructed road network and another previously existing road on the amphibians and reptiles inhabiting the buffer zone of the biosphere reserve "Srebarna". For the entire period of study in the three studied road sections a total of 15 dead specimens of amphibians belonging to 4 species (*Bombina bombina, Hyla arborea, Bufo bufo, Bufo viridis)* and 70 dead specimens of reptiles belonging to 8 species (*Emys orbicularis, Ablepharus kitaibelii, Lacerta viridis, Podarcis tauricus, Podarcis muralis, Natrix natrix, Coronella austriaca* and *Dolichophis caspius*) were recorded. Several "hot spots", where most cadavers were recorded are well described and possible conservation measures are discussed.

17. Yancheva V., **I. Mollov,** I. Velcheva, E. Georgieva, S. Stoyanova. 2016. Heavy Metal Effects on the Lysosomal Membrane Stability and Respiratory Rate in Chinese Pond Mussel (*Sinanodonta woodiana*) Under *Ex situ* Exposure: Preliminary Data. - *Biharean Biologist,* 10(1): 55-57. (Цитирана в списание с Impact Factor).

The Chinese pond mussel (*Sinanodonta woodiana*) is a unionid mussel, which is known to accumulate heavy metals,making it useful for biomonitoring. The current preliminary research aimed to study the lysosomal membrane stability inheamocytes of *Sinanodonta woodiana* by applying the neutral red retention assay (NRR), as well as changes in the respiratory rateunder acute metal exposure. The mussels were treated with different concentrations of Ni and Pb in laboratory conditions for 72 h.After the 72nd h exposure to Ni and Pb the lysosomes retained the dye between 30 to 60 minutes in the mussels exposed to thehigher concentrations. The respiratory rate was measured at the 24th and 72nd hour and it increased in a dose-dependent manner.We can conclude that the acute metal exposure, including all metal concentrations below the allowable concentrations, lead todestabilization of the lysosomal membrane stability and changes in the respiratory rate.

18. **Mollov I.,** D. Georgiev, B. Todorova, S. Stoycheva, I. Velcheva, B. Nikolov. 2009. A Review of the Influence of the Urbanization on the Vertebrate Fauna of the City of Plovdiv. - *Biotechnology & Biotechnological Equipment, 23(2 Special Edition):* 242-245. (Цитирана в списание с Impact Factor).

The current paper reviews the available literary data as well as original unpublished data on the distribution and the species'richness of the vertebrate fauna (Pisces, Amphibia, Reptilia and Mammalia) in the city of Plovdiv (South Bulgaria) and itsrelations to the level of urbanization. The species richness of each vertebrate group was presented, along a spatial gradientdenoted by three points, representing low, moderate, and high levels of urbanization. We recorded no visible total generalpattern of decrease of the total species richness in all

studied vertebrate groups from the rural zones to the city center. Some differences in species richness along the urban–rural gradient apparently exist among the taxa. The only vertebrate group thatshowed a degrease pattern in the species richness from the rural to urban zones were the amphibians. Similar pattern wasrecorded in the reptiles, except for the urban zone, where a slight increase in the species richness was observed. The fishes andmammals showed very peculiar distribution pattern along the urban-rural gradient with highest species richness in thesuburban zone. Possible explanations of these patterns are discussed.

19. **Mollov I.,** B. Naumov, D. Dobrev, G. Popgeorgiev. 2013. Conservation activities for European pond turtles (*Emys orbicularis*) in Bulgaria. - *Herpetology Notes,* 6: 135-138. (Цитирана в списание с Impact Factor).

In Bulgaria, the European pond turtle (*Emys orbicularis*) is distributed along rivers, streams, irrigation canals andin marshes, ponds, dams and fisheries throughout the country up to 1100 m a.s.l. Several studies onthe European pond turtle have used Bulgarian pondturtles since the beginning of the nineties. However, only afew studies have focused on the conservation biology of *E. orbicularis* in Bulgaria. Furthermore, there are still datalacking about the species' ecology, population structure, reproductive biology and ethology in the country. In Bulgaria, *Emys orbicularis* has a high conservation value and is protected by the national legislation by the "Biodiversity Protection Act of Bulgaria", listed in the annexes II – "Species, for which conservation,preservation areas are established for their habitatprotection" and III – "Species protected in the wholecountry territory". It is also listed in the annexes II and IV of the Habitat Directive (Council Directive 92/43/EEC, 1992); listed in the annex II (Strictly protectedfauna species. Status in force since March 1st, 2002) of the Bern Convention, which came into effect in Bulgaria on May 1st, 1991 (Bern Convention, 1979);listed as NT "Lower Risk/near threatened" category inthe IUCN-RedList. The main threats for the species in Bulgaria are: predationon eggs, juveniles and adults, habitat destruction,human consumption, collecting for trade and possiblecompetition with the red-eared terrapin (*Trachemys scripts elegans*), which is still very poorly studied in Bulgaria.

20. Желев Ж., **И. Моллов.** 2004. Проучване на някои основни морфологични показатели при *Rana ridibunda* (Amphibia, Anura) от антропогенно повлияни райони. – *Научни трудове на ПУ "Паисий Хилендарски", Биология, Animalia,* 40(6): 137-151.

The current paper presents data concerning some basic morphological parameters (body length and weight, weight of the liver, liver index) in *Rana ridibunda* Pallas, 1771, derived from anthropogenically influenced regions (industrial pollution), compared to a control group. Sexual and seasonal differences were established for all morphological parameters. A distinct hepatomegaly was established in the frogs inhabiting the polluted regions.

21. Popgeorgiev G., **I. Mollov.** 2005. A study on the effects of fires on the populations of the green lizard *Lacerta viridis* (Laurenti, 1768) in Eastern Rhodopes. - *Scientific Studies of the University of Plovdiv - Biology, Animalia,* 41: 95-108.

Due to the high intensity of the fires occurred in the Eastern Rhodopes (South-east Bulgaria) in the period of 2000-2004 large parts of the habitatsof the green lizard (*Lacerta viridis)* were damaged. In the current study dataconcerning the effects, the dynamics and the rates of restoration of the populations ofthe green lizard due to fires is presented. The blaze

destroys a considerable amount ofthe individuals. During the first year of our study in the burned area the averagedensity (D) was 13,74 specimens per ha and in the samples area D was 57,02specimens per ha or presented in percentage - 19,42% against 80,58%. Despite theinflicted damage the populations of the green lizard are recovering considerablyrapidly in the studied regions. An equilibrium of the average densities wasestablished in the third year after the fire (they were statistically insignificant -p=0.79), the average density at the fire site was D=53,74 specimens per ha and at thesamples site it was D=60,01 specimens per ha. The reasons of this are complex: aconsiderably large amount of the sexually mature animals actually survive the fireusing shelters; there are individuals migrating from the burned site to the samples siteand vice versa; the populations of the studied species are with high density in theareas around the fire site and etc.

22. Valkanova M., **I. Mollov,** B. Nikolov. 2009. Mortalities of the Green Toad, *Epidalea viridis* (Laurenti, 1768) in Urban Environment: A Case Study from the City of Plovdiv. - *Ecologia Balkanica,* 1: 21-26.

    The current study analyzes the types of mortalities of the greentoad (*Epidalea viridis*) in the city of Plovdiv. Among all recorded mortalities(n=42), the road kill was the most common cause of death (65 % of the cases),followed by killing by humans (usually children) – 31%. Killing of green toads bydogs (2%) and domestic cats (2%) has the lowest impact.Both most significant factors (road kill and killing by humans) affect mainlythe adult specimens. No statistically significant difference between themortalities of the two sexes was detected.

23. **Mollov I.** 2012. Another case of melanism in the Grass snake *Natrix natrix* (Linnaeus, 1758) (Reptilia: Colubridae) from Bulgaria. - *ZooNotes,* 28: 1-3.

    A melanistic specimen of *Natrix natrix* from Plovdiv, Bulgaria was found. This is the third recorded case of melanism in the Grass snake in Bulgaria. Short morphological descriptions of the specimen, as well as some taxonomical and ecological comments are given.

24. Yocheva S., A. Irikov, S. Petrova, **I. Mollov.** 2013. Assessment of the Threats to the Biodiversity and Habitats in “Stara Reka” Reserve (Bulgaria) and Its Adjacent Subalpine and Alpine Areas. - *Ecologia Balkanica,* 5(1): 119-127.

    The assessment of the threats in the “Stara Reka” reserve and its adjacent subalpine and alpine areas is important since it makes it possible the appropriate conservation measures to be taken in order to prevent or reduce the negative effects on the biodiversity and habitats. The assessment was based on systematic studies and visits in the “Stara Reka” Reserve, located within National Park “Central Balkan” (Bulgaria), during spring, summer and autumn seasons of 2010-2011. A number of threats were recorded, where those by anthropogenic origin were predominating. Tourists have negatively influenced the wild plants such as *Allium ursinum, Inula helenium* and *Primula frondosa* by picking them up. Damages were registered on the information system and signs. Waste disposal, fires, poaching and illegal fishing were also some of the recorded threats. Many natural succession changes quite dynamically vary the habitats in the reserve, but the most dangerous for the biodiversity and degradation of habitats remain fires, erosion and introduction of alien species.

25. Deleva S., **Mollov I.,** V. Fidanova, A. Mechev.. 2014. Species Diversity and Distribution of Amphibians and Reptiles in Nature Park "Sinite Kamani" in Stara Planina Mt. (Bulgaria). - *Ecologia Balkanica,* 6(2): 83-92.

    The current study presents briefly the species composition and distribution of the amphibians and reptiles in the Nature Park "Sinite Kamani" in Stara Planina Mnt. Bulgaria, based on a 2×2 km UTM grid. Between 2012 and 2014, we identified total 20 species (7 amphibians and 13 reptiles). We documented three new amphibian species for the region (*Hyla arborea, Rana dalmatina* and *Rana graeca*, which is discovered for the area for the first time) and three species of reptiles (*Testudo hermanni, Ablepharus kitaibelii* and *Lacerta trilienata)*. The contemporary conservation status for each species is presented and conservation threats and problems, specific for the park are discussed.

26. **Mollov I.** 2014. Level of Synanthropy of the Amphibians and Reptiles from the City of Plovdiv (Bulgaria). - *Ecologia Balkanica,* 6(2): 109-112.

    The current study determines the level of synanthropy of the amphibians and reptiles in the city of Plovdiv, based on Nuorteva's Index of synanthropy, with slight modification, proposed here for the first time.

27. **Mollov I.,** Georgiev D. 2015. Plovdiv. In: John Kalcey (Editor), *Vertebrates and Invertebrates of European Cities: Selected Non-Avian Fauna.* Springer Publ., pp. 75-94.

    This extensive synopsis comments on the species composition, distribution, habitat preferences and threats of the fish, amphibians, reptiles and mammals in the city of Plovdiv. Except for the literary data, some new data is presented here for the first time.

28. Georgiev D., Petrova S., Gecheva G., Velcheva I., Tsekov A., Yancheva V., Nikolov B., Stoyanova S., Valcheva E., **Mollov I.** 2015. Freshwater habitats in Plovdiv town and its surroundings and their importance for the biodiversity. - *Journal of BioScience and Biotechnology,* 4(2): 139-148.

    The current synopsis reviews the types of aquatic habitats, that are located in the city of Plovdiv and analyses their importance for the biodiversity. Studies of the biodiversity in urban landscapes are of particular importance because they are still scarce. Several plant and animal groups are studied in the city of Plovdiv – mosses, mollusks, fish, amphibians, reptiles, birds and mammals. Their distribution among habitats is presented, as well as specific threats and conservation problems.

29. Gospodinova A., Georgiev D., **Mollov I.** 2015. Shell morphometry of populations of *Zebrina detrita* (Mollusca: Gastropoda: Pulmonata) in Bulgaria. - *Ecologia Balkanica,* 7(2): 72-83.

Six populations of *Zebrina detrita* Müller, 1774 (Mollusca: Gastropoda: Pulmonata) occuring in different habitats, regions and altitude were studied by shell morphology. The width and height of the shell and its aperture were measured, and also the last whorl height. Their proportions were calculated. Some differences in the shell size were registered in populations situated at different altitude.

30. **Mollov I.,** Georgiev D., Basheva S. 2015. Is the Kotschy's Gecko *Mediodactylus kotschyi* (Steindachner, 1870) (Reptilia: Gekkonidae) active during the winter? - *ZooNotes,* 84: 1-3.

    The current communication reports few cases of unusual winter activity of the Kotschy's Gecko – *Mediodactylus kotschyi rumelicus* from the city of Plovdiv and *Mediodactylus kotschyi daniliewskii* from Hrishteni Village (Stara Zagora District) in Bulgaria.

31. **Mollov I.,** I. Velcheva. 2015. Ecological classification of the amphibian and reptilian fauna in the city of Plovdiv. - *Journal of BioScience and Biotechnology,* 2015, SE/ONLINE: 259-264.

    The current study attempts to classify the amphibian and reptilian fauna in urban environment, characterized by: ecological plasticity and habitat preferences; temperature regime; humidity and level of synanthropy. Totally seven amphibian species (*Bufo bufo, Bufo viridis, Hyla arborea, Pelobates syriacus, Rana dalmatina* and *Pelophylax ridibundus*) and eight species of reptiles (*Mediodactylus kotschyi, Lacerta viridis, Lacerta trilineata, Podarcis tauricus, Emys orbicularis, Natrix natrix, N. tessellata* and *Dolichophis caspius*) are analyzed and classified in ecological groups according to the above mentioned characteristics.

32. Dimitrov D., N. Minchev, L. Ikonomov, N. Karaivanov, A. Stojanova, V. Mitkovska, A. Pavlova, **I. Mollov,** M. Filipova-Marinova, D. Dimitrov. 2015. GIS models of the environmental factors and the sustainable territorial development constraints in three nature protection areas in the city of Plovdiv. - *Journal of BioScience and Biotechnology,* 2015, SE/ONLINE: 265-280.

    The aim of this study was to define and to analyze the environmental and territorially-determined factors and constraints influencing the sustainable development and the sustainable management of three protected areas located in the city of Plovdiv. The study sites are natural protection areas of unique nature due their mixed natural and anthropogenic functions. Being integral parts of the city they are balancing the requirements of specialized nature protection with their typical urban recreational role as urban parks. In order to meet the requirements of all these overlapping and sometimes controversial functions, the present study analyses the territorial development factors and constraints through detailed geo-informational models of the territory and its biotic, abiotic, natural and anthropogenic structures. These models were developed as part of the work on the management plans of the three protected sites. The biotic and abiotic factors were investigated through field surveys where all major plant and animal groups were studied. All important species and habitats, all specific threats and conservation problems together with all anthropogenic structures were mapped as parts of the GIS model which then served as a basis for the functional zoning of the three protected territories.

33. Irikov A., **I. Mollov.** 2015. Terrestrial gastropods (Mollusca, Gastropoda) of Strandzha Mountain and the Black Sea coast (Bulgaria and Turkey). - *Historia naturalis bulgarica,* 21: 13-48.

The current synopsis presents an overview of the terrestrial malacofauna of Strandzha Mountain in Bulgaria and Turkey,based on previously published and new data. As a result of the research we recorded 101 species and subspecies of terrestrialmolluscs belonging to 27 families. The data on the terrestrial malacofauna from the Turkish part of Strandzhais entirely new and presented here for the first time. The synopsis includes a list of synonymous species and subspeciesconcerning the area of research, all known localities, new localities reported for 50 taxa, systematic and environmentaldata. For the first time a zoogeographical and conservation analysis of the terrestrial snails is made.

34. Georgiev D., **Mollov I.** 2016. Notes on the herpetofauna of Ismaros Mts. (Northern Greece, Rhodopi County). - *Ecologica Montenegrina,* 5: 41-43.

    The study presents new information about the herpetofauna of Ismaros Mts. in Greece. On several trips made in April and June in 2015 to Ismaros Mts, 5 amphibian species - *Lisstriton vulgaris, Bufo bufo, B. viridis complex, Hyla arborea complex* and *Pelophylax ridibundus* and 8 reptiles - *Testudo graeca, Mauremys rivulata, Mediodactylus kotschyi, Pseudopus apodus, Lacerta viridis, Xerotyphlops vermicularis, Natrix natrix* and *Malpolon insignitus* were recorded.

35. Naumov B., N. Tzankov, K. Donchev, B. Petrov, A. Stojanov, G. Popgeorgiev, **I. Mollov,** V. Beshkov. 2016. The Herpetofauna (Amphibia and Reptilia) of Vrachanska Planina Mountains - Species Composition, Distribution and Conservation. - In: Bechev, D. & Georgiev, D. (Eds.), *Faunistic diversity of Vrachanski Balkan Nature Park. ZooNotes, Supplement 3,* Plovdiv University Press, Plovdiv, pp. 231-257.

    Vrachanska Planina Mts. is located in northwestern Bulgaria and is a relatively well-defined part of Stara Planina Mts. So far, no comprehensive studies on the species composition and distribution of the herpetofauna of Vrachanska Planina Mts. have been published. The current study reports 8 new species of amphibians and reptiles, which are new for the region and confirms all previously known 19 species. All species localities have been mapped in the UTM-grid (1×1 km). The spatial distribution, as well as the vertical distribution and the species richness are analyzed. The importance of the existing protected areas in Vrachanska Planina Mts. and protected Natura2000 zones for the conservation of herpetofauna are discussed. Some potential threats to amphibians and reptiles in the research area (such as drying-up of water basins, fires and road mortality) are reported.

36. **Mollov I.** 2016. The Herpetological Collection of the Department of Ecology and Environmental Conservation, Faculty of Biology, University of Plovdiv (Bulgaria). *Bulletin of the Natural History Museum – Plovdiv,* 1:1-10.

    The herpetological collection of the Department of Ecology and Environmental Conservation in the Faculty of Biology at the University of Plovdiv (Bulgaria) is represented by 14 amphibian species and 21 species of reptiles - a total of 245 samples. The amphibian species in the collection belong to 2 orders, 6 families, 11 genera and the reptiles - 2 orders, 8 families, 15 genera. A large part of the collection contains no information of the collector or collection date and locality. The material is stored in alcohol and is located in exibition cabinets on the second floor of the Faculty

of Biology at the University of Plovdiv, as well as the funds of the Department of Ecology and Environmental Conservation.

37. Yancheva V., **I. Mollov,** I. Velcheva, E. Georgieva, S. Stoyanova. 2016. Effects of Cadmium (Cd) on the Lysosomal Membrane Stability and Respiration Rate of two Freshwater Mollusks under *Ex Situ*) Exposure: Preliminary Data. - *South Western Journal of Horticulture, Biology and Environment,* 7(1): 27-34.

    The aim of the study was to give some preliminarydata on the effects of Cd, which is considered as priority toxic substance insurface waters according to Directive 2008/105/EO (2008) on the lysosomalmembrane stability and respiration rate in two invasive and resilient tochanges in the surrounding media freshwater mollusks − Chinese pondmussel (*Synanodonta woodiana*) and zebra mussel (*Dreissena polymorpha)* in laboratory conditions for 72 hours. Significant decrease in the lysosomaldestabilization indices with lower retention time and increase in therespiration rate index were observed in the treated with Cd mussels,compared with the control. In general, the tested species proved to besensitive to Cd exposure in terms of the two studied biomarkers.

38. Yancheva V., **I. Mollov,** I. Velcheva, S. Stoyanova, E. Georgieva. 2016. Cadmium (Cd) affects the gill structure and respiration rate of Common Carp (*Cyprinus carpio* L.). - *ZooNotes,* 97:1-4.

The main purpose of the present study was to provide some preliminary data on the effects of Cd, which is considered as priority toxic substance in surface waters according to Directive 2008/105/EO on the gill structure and respiration rate of common carp (*Cyprinus carpio* L.) under ex situ conditions. We observed significant histological changes, which were grouped as proliferative and degenerative ones, as well as increase in the respiration rate index in the treated with Cd fish, compared with the control. In general, the tested fish species proved to be sensitive to Cd exposure in terms of the studied parameters.

39. **Mollov I.** 2005. A study of the influence of the automobile transport on the amphibians in urban environment. – In: Yankov P. & A. Petrova (Eds.) *Proceedings of Student Scientific Conference "Biodiversity conservation and protected territories management",* 17.XII.2005, Bulgarian Biodiversity Foundation, University of Sofia, Faculty of Biology, Sofia pp. 82-88 (In Bulgarian, English summary).

This paper examines the effects of automobile traffic and road density on two species ofamphibians – the common toad (*Bufo bufo*) and the green toad (*Bufo viridis*) inhabiting the town of Plovdiv.The results obtained from this study showed that roadways are negatively impacting amphibians inhabitingurban environment.

## Учебници и учебни помагала

**1. Велчева И., А. Цеков, А. Ириков, Б. Темелков, Г. Гечева, И. Моллов, Д. Георгиев. 2009. Ръководство за лабораторни и теренни упражнения по Екология. Университетско издателство „Паисий Хилендарски", Пловдив, 155. ISBN: 978-954-432-476-8.**

Приложеното „Ръководство за лабораторни и теренни упражнения по Екология" има за главна цел чрез серия от практически упражнения да онагледи някои екологични процеси и явления, изучавани в лекционния курс по „Екология", както и да представи някои основни методи в екологичните изследвания, както в лабораторни, така и в полеви условия. В ръководството са представени моделни теми, обхващащи основните раздели на съвременната екологична наука. Представени са методи, изучаващи влиянието на абиотични фактори, популационни характеристики, взаимоотношения в съобществата, процеси в екосистемите. Обработката на резултатите дава възможност на студентите да използват аналитичен подход и е предпоставка за дискусии и извеждане на конкретни или обобщаващи изводи.

***Приложение 13-0-1 (В PDF (корица) на диска и оригинал в допълнителната кутия).***

**2. Георгиев Д., И. Велчева, Г. Гечева, С. Петрова, И. Моллов. 2011. Замърсяване на водите и въздействие върху екосистемите. Университетско издателство „Паисий Хилендарски", Пловдив, 151. ISBN 978-954-423-721-9.**

Проложеният учебник е разработен съобразно учебните планове за дисциплините „Замърсяване на водите" и „Замърсяване на водите и въздействие върху екосистемите", включени в бакалавърската програма на специалност „Екология и ООС" при Биологическия факултет на ПУ „Паисий Хилендарски". В учебника са представени характеристиката на водата като среда за живот и природен ресурс, типовете замърсявания и въздействието, което те оказват върху водните екосистеми. Обърнато е специално внимание на съвременното българско законодателство и мониторинга на водите в България. Учебникът е предназначен за студенти от Биологическия факултет на ГТУ „Паисий Хилендарски". Той може да се използва и от всички студенти, изучаващи екологични специалности в други висши учебни заведения в страната.

***Приложение 13-0-2 (В PDF (корица) на диска и оригинал в допълнителната кутия).***

**3. Велчева И., А. Цеков, А. Ириков, И. Моллов, Д. Георгиев, С. Петрова. 2013. Лабораторни упражнения по екология. Университетско издателство "Паисий Хилендарски", Пловдив, 99 стр. ISBN 978-954-423-857-5.**

Приложеното учебно помагало за „Лабораторни упражнения по екология" има за главна цел чрез серия от практически упражнения да онагледи някои екологични процеси и явления, изучавани в лекционния курс по „Екология", както и да представи някои основни методи в екологичните изследвания в лабораторни условия. Включените теми са дело на всички членове на катедра „Екология и ООС" на Пловдивския университет и отразяват натрупания им опит в преподавателската и научната работа в съответното направление. Те са съобразени с възможностите за реалното им изпълнение от студентите, както на Биологическия факултет, така и на тези от други висши училища, обучаващи бъдещи еколози. Лабораторните упражнения успешно могат да се използват и от учители, преподаващи екологични уроци в средното училище.

***Приложение 13-0-3 (В PDF (корица) на диска и оригинал в допълнителната кутия).***

**4. Велчева И., А. Цеков, А. Ириков, Г. Гечева, Д. Георгиев, И. Моллов, С. Петрова, Б. Николов, Б. Тодорова, Б. Темелков. 2013. Теренни упражнения по Обща и Консервационна екология. Университетско издателство "Паисий Хилендарски", Пловдив, 2013, 157 стр. ISBN 978-954-423-840-7.**

Приложеното учебно помагало за „Теренни упражнения по обща и консервационна екология" е първо по рода си в българската екологична литература. Основната му цел е чрез серия от подбрани теренни упражнения да даде възможност за практическо приложение и осмисляне на някои екологични процеси и явления, изучавани в лекционния курс по „Екология", както и да представи някои основни методи в екологичните изследвания, прилагани при работа в теренни условия. То предлага и модел за изучаване от екологична гледна точка на различни категории защитени територии, разглеждани в лекционните курсове по „Опазване на природната среда" и „Консервационна екология". Предложените теми в това учебно пособие са дело на всички членове на катедра „Екология и ООС" на Пловдивския университет и

отразяват натрупания им опит в преподавателската и научната им работа. Те са съобразени с възможностите за реалното им изпълнение от студентите, както на Биологическия факултет, така и на тези от други висши училища, обучаващи бъдещи еколози. Не на последно място, темите могат да се използват и от учители, преподаващи уроци с екологично съдържание в средното училище. В настоящото учебно помагало са представени моделни теми, обхващащи основните раздели на съвременната екологична наука. Представени са методи, изучаващи влиянието на абиотични фактори, популационни характеристики, взаимоотношения в съобществата, особености и консервационен статус на екосистемите. Обработката на резултатите дава възможност на студентите да използват аналитичен подход и е предпоставка за дискусии и извеждане на конкретни или обобщаващи изводи.

***Приложение 13-0-4 (В PDF (корица) на диска и оригинал в допълнителната кутия).***

**5. Велчева И., А. Цеков, А. Ириков, И. Моллов, Д. Георгиев, С. Петрова. 2015. Лабораторни упражнения по екология. Второ преработено издание, Университетско издателство "Паисий Хилендарски", Пловдив, 98 стр. ISBN 978-619-202-085-9.**

Приложеното учебно помагало за „Лабораторни упражнения по екология" е второ преработено и допълнено издание, в което са изчистени и коригирани някои допуснати грешки в предишното издание, така и премахнати и допълнени някои теми. Ръководството има за главна цел чрез серия от практически упражнения да онагледи някои екологични процеси и явления, изучавани в лекционния курс по „Екология", както и да представи някои основни методи в екологичните изследвания в лабораторни условия. Включените теми са дело на всички членове на катедра „Екология и ООС" на Пловдивския университет и отразяват натрупания им опит в преподавателската и научната работа в съответното направление.

***Приложение 13-0-5 (В PDF (корица) на диска и оригинал в допълнителната кутия).***

**6. Моллов И. 2017. Екологична паразитология, Университетско издателство "Паисий Хилендарски", Пловдив, 143 стр. ISBN 978-619-202-255-6.**

Приложеният учебник по „Екологична паразитология“ цели да представи паразитологията според съвременните еколочни представи и теория. Разглеждат се

чисто екелогични проблеми, включително гостоприемникът, като среда за живот, екологична ниша на паразита, особености на паразитните популации и съобщества, социален паразитизъм и др. Без да претендира за изчерпателност автора разглежда паразитологията от гледна точка на еколога, избягвайки традиционният паразитологичен подход, базиран на подробно описание на анатомията, физиологията и систематиката на видовете паразити. Тази част от паразитологията е достатъчно добре описана и присъства в редица учебници по зоология и обща паразитология. Въпреки това процесите, касаещи екологията на паразитите и техните гостоприемници са добре илюстрирани с редица интересни примери, които целят да обяснят по-добре теоретичната част от една страна и да надградят знанията на студентите получени по дисциплините по обща екология, зоология и ботаника от друга. Учебника е предназначен специално за студентите от специалности "Екология на биотехнологичните производства" и "Медицинска биология", към Биологическият факултут на ПУ "Паисий Хилендарски", които изучават дисциплината "Екологична паразитология", но той може да бъде полезен също така на всички студенти изучаващи екология и биология от всички ВУЗ-ове в страната.

***Приложение 13-0-6 (В PDF (корица) на диска и оригинал в допълнителната кутия).***

**7. Попов В., И. Велчева, С. Петрова, <u>И. Моллов</u>. 2017. Биологично земеделие и агробиоразнообразие. Университетско издателство “Паисий Хилендарски“, Пловдив, 171 стр. ISBN 978-619-202-274-7.**

Приложеният учебник по „Биологично земеделие и агробиоразнообразие“ е предназначен за всички студенти, научни работници, преподаватели и др., които искат да научат нещо повече за биоразнообразието и начините за неговото опазване. Изучаването на биоразнообразието е от сосбена важност, за да се предоставят инструменти на стопаните на природата в селските райони – фермерите – да го съхраняват, опазват и използват чрез прилагане на екологосъобразни земеделски практики като биологичното производство и др.

***Приложение 13-0-7 (В PDF (корица) на диска и оригинал в допълнителната кутия).***

## I. ОСНОВНИ ПРИНОСИ В ПРЕДСТАВЕНИТЕ ЗА РЕЦЕНЗИРАНЕ НАУЧНИ ТРУДОВЕ

Научните интереси и публикации на гл. ас. д-р Ивелин Моллов са основно в областта на градската екология, екология и фаунистика на земноводни и влечуги и екологичната токсикология.

На база представените 39 научни публикации за участие в конкурса, могат да бъдат посочени следните по-важни приноси, групирани в две направления: приноси с научен и с научно приложен характер.

### I. 1. Приноси с научен характер

#### 1. 1. В областта на херпетологията

В списъка с публикации са посочени няколко статии, които разглеждат видовото разнообразие и разпространението на земноводните и влечугите в различни географски области в страната и чужбина. Основната заслуга на автора в това направление са работите върху херпетофауната на ПП „Сините камъни“ (Публикация № 25) и Врачанска планина (Публикация № 35) в съавторство с големи екипи от херпетолози, поради обема и естеството на работата. Освен това подробно е описана и колекцията от земноводни и влечуги на катедра «Екология и ООС», към БФ на ПУ, където също се съобщават не малко находища на българските видове земноводни и влечуги (Публикация № 36). Извън страната гл. ас. И. Моллов има скромен принос за изучаване на херпетофауната на планина Исмарос в Гърция, в съавторство с доц. Д. Георгиев (Публикация № 34) и за откриването на едно ново находище на *Podarcis siculus* в Турция (Публикация № 33).

Гл. ас. И. Моллов е автор и на някои интересни съобщения за меланистичен екземпляр на жълтоухата водна змия (*Natrix natrix*) - Публикация № 23, необичайна зимна активност на балканският гекон (*Mediodatylus kotschyi*) - Публикация № 30 и сравняване на размерите на яйцата на същия вид, с някои бележки върху репродуктивната му биология (Публикация № 14).

Един от основните приноси в работата на гл. ас. д-р И. Моллов е изучаването на хранителната екология на представителите от гущерите. Допълнени са данните за храната на *Lacerta agilis, Lacerta viridis, Lacerta trilineata, Podarcis tauricus, Podarcis muralis* и *Anguis fragilis* — Публикации № 1, 8, 13, 15).

Не малко са и изследванията върху екологията на видове от херпетофауната. В съавтроство с Г. Попгеоргиев е разгледана негативната роля на пожарите върху популациите на зеления гущер (*Lacerta viridis*) в Източни Родопи (Публикация № 21), както и заплахите и консервационните проекти за опазване на обикновенната блатна костенурка (*Emys orbicularis*) у нас (Публикация № 19). Оценено е също негативното влияние на автомобилния трафик в буферната зона на резерват «Сребърна» (Публикация № 16) и заплахите върху биоразнообразието, включително и върху земноводните и влечугите в резерват «Стара река» (Публикация № 24).

**1.2. В областта на малакологията**

Въпреки, че малакологията не представлява основен научен интерес, гл. ас. Моллов е взел участие в няколко малакологични иследвания, касаещи видовият състав и разпространението на сухоземните охлюви в Западни Родопи (Публикация № 11) и Странджа планина (Публикация № 12) и двете в съавторство с гл. ас. А. Ириков, където той е водещ автор. Двамата автори също така разглеждат подробно твърде интересният въпрос за преноса на черупки от сухоземни охлюви с помощта на морските течения (Публикация № 2). В съавторство с А. Господинова и доц. Д. Георгиев е направено и едно проучване върху морфометрията на черупките на *Zebrina detrita* (Публикация № 29).

**2. В областта на градската екология**

Основния акцент от работата на гл.ас. д-р Ивелин Моллов е в областта на градската екология. Той е автор на редица проучвания върху земноводните и влечугите и влиянието на урбанизацията върху тях. Проучено е подробно видовият състав и разпространението на тези два класа гръбначни животни, като той е стравнен с тези на рибите и бозайнците (Публикация № 18, 27, 28, 32). За първи път е направена екологична класификация на земноводните и влечугите в гр. Пловдив от гледна точка на приспособеността им към условията на градската среда (Публикация № 31), както и от гледна точка на степента им на синантропизация (Публикация № 26). Също така са разгледани и няко конкретни проблеми, като влиянието на автомобилният трафик върху популациите на зеноводните (Публикация № 39) и заплахите и причините за смъртността на зелената кръстава жаба в гр. Пловдив (Публикация № 22).

**3. В областта на екотоксикологията**

Не малък е приноса на автора и областта на екологичната токсикология със земноводни (Публикация № 9, 10, 20), мекотели (Публикация № 3, 5, 7, 17, 37) и риби (Публикация № 4, 6, 10, 38), където са постигнати интересни резултати използвайки иновативни етоди за анализ и тесвайки различни замърсители – тежки метали, пестициди и органични вещества.

## I. 2. Приноси с научно-приложен характер

През 2014 г. от И. Моллов е предложена модификация на индекса на синантропност на Неортева, който е успешно приложен за земноводните и влечугите в гр. Пловдив, а в последствие използван и от други автори за оценка степента на синантропизация и при други таксономични групи (Публикация № 26).

16.07.2018 г.
гр. Пловдив

Съставил: ... ... ... ... ...
(гл.ас. д-р И. Моллов)