



Obituary

Alexander Komarov (1945–2015)



Alexander Komarov (Photo provided by Elena Zubkova).

With deeply felt sadness we have to inform that Prof. Alexander Komarov passed away unexpectedly on May 31st, 2015. Alexander has been Associate Editor of Ecological Modelling since 2010.

Alexander Komarov was born on March 20th, 1945, in Baranovich, USSR (currently Republic of Belarus). His academic training included a degree from Moscow State University (Department of Mechanics and Mathematics) in 1971 and a PhD that he received in 1986 with the thesis entitled “Discrete dynamic models of plant populations”. Prof. Komarov founded a research group on Ecological Modelling in 1989, which became a Laboratory of Ecosystem Modelling in 1995. For more than 40 years he worked at the Institute of Physicochemical and Biological Problems in Soil Science RAS in Pushchino. Alexander has published more than 150 scientific papers in highly ranked Russian and international journals.

Alexander was a mathematician who dedicated his life to solving complex problems in Biological and Ecological Sciences. He

pioneered in such areas as modelling ecosystem structure, soil processes; studying plant population dynamics and biological turnover in forest ecosystems.

Prof. Komarov developed, in close collaboration with colleagues from St. Petersburg State University, the model ROMUL, which simulates the dynamics of soil organic matter. Further developments included systems of mathematical models EFIMOD describing the cycling of carbon and nitrogen in forest ecosystems to analyze different scenarios of forest productivity in boreal and temperate zones under climate change, the effects of forest management and catastrophic impacts on forest ecosystems (forest fires, windfalls, clear cuttings). In cooperation with colleagues from the Institute of Mathematical Problems of Biology RAS, Prof. Komarov also took part in the development of theoretical foundations and algorithms for assessing changes in forest plant biodiversity in natural and human-managed ecosystems.

The above mentioned models combine population and balance approaches. This feature allowed explaining the interconnection between plant population structure and cycling of nutrients between vegetation, soil and atmosphere. Alexander emphasized the regulating role of soil and the feedback mechanism from decomposition processes in soil to the productivity of forest vegetation. His results also demonstrated the influence of forest management regime on species and age structure of forest stands, as well as on the dynamics carbon and nitrogen stocks.

Alexander clearly depicts the perspectives of ecological modelling and discussed further development of simulation models on numerous workshops. He defined the main objective of his scientific team to develop a model of succession of forest vegetation.

Prof. Komarov was one of the founders of the Pushchino State University in the Biological Centre of Russian Academy of Sciences, which is the unique university in Russia where students have an opportunity to communicate with leading Russian scientists and create a new scientific knowledge in research laboratories during their education process. He was a talented lecturer with a unique style of lectureship which involved students into the deep understanding of problems under consideration. His extensive erudition allowed him to make numerous empirical examples supporting the theoretical issues. Alexander also trained several PhD students, some of which continued the scientific career in his laboratory.

In 2009, Prof. Komarov founded a series of biennial national conferences on ecological modelling which were aimed at establishing a connection between specialists from different research fields: mathematicians, computer scientists, ecologists, population

biologists etc. The 4th National Conference on ecological modelling in May 2015 was unfortunately the last one headed by Alexander.

Alexander had an encyclopaedic knowledge in different fields. He gathered a large personal library containing many rare books. He was bright and very communicable man, an outstanding scientist, talented teacher and a very kind person. Alexander will live forever in our hearts and memories.

Vladimir Shanin
Pavel Grabarnik
Oleg Chertov
Sergey Bykhovets
Pushchino, Russia

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