

## CURRICULUM VITAE

**Name & Position, Contact:** David Tarkhnishvili, Dr. Sc., Professor, School of Natural Sciences and Engineering; Director, Institute of Ecology, Ilia State University. Rector's adviser in research.

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**Education:** Saratov State University (Russia), faculty of biology 09.1977-09.1979

Tbilisi State University (Tbilisi, Georgia), faculty of biology 09.1979-09.1982

M.Sc. (biology) with honors, 07.1982.

**Post-graduation:** Institute of Plant and Animal Ecology, USSR Academy of sciences, Sverdlovsk (Ekaterinbourg). 09.1983-09.1986. Supervisor: Dr. O. A. Pjastolova

### Scientific degrees:

D.Sc (3/04), Institute of Zoology , Georgian Acad. Sci. The subject: **Ecology and Speciation - the Amphibians of the Caucasus**

Ph.D (ecology), 01.1987. Inst. Plant. Anim. Ecol. Sverdlovsk, Russia. The Project: **Developmental Ecology of three newt species of the Caucasus**

**Publications:** over 164 publications, including 49 papers indexed in SCOPUS. h-index 17 (SCOPUS), 26 (Google Scholar). Citation index: 745 (SCOPUS).

### Post-doctoral positions:

NATO/ Royal Society post-doctoral fellowship, School of Biological Sciences, University of Wales at Bangor, UK. <http://biology.bangor.ac.uk> Scientific hosts: Prof. Roger S. Thorpe, Dr. J. W. Arntzen. 09.1996-09.1997. The project: **Population genetic analysis of the Caucasian salamander (*Mertensiella caucasica*)**

Alexander von Humboldt fellowship, Zoologisches Forschungsinstitut & Museum Alexander Koenig, Bonn, Germany. Scientific hosts: Prof. Wolfgang Böhme, Prof. Clas Naumann. 07.1999-12.2000 and 04.2002-04.2003

Projects: (1) **Brown Frogs of the Near East: Allochthonic Origin, Adaptive Radiation Or Spontaneous Adaptations To The Local Environment?** (2) **Landscape transition and speciation in Southern Caucasus: case study of rock lizards from *Lacerta rudis* group.** <http://www.museumkoenig.uni-bonn.de/mit/dtarkhn1.htm#Tarkhnis>

DFG fellowship. Zoologisches Forschungsinstitut & Museum Alexander Koenig, Bonn, Germany. 01-03. 1998. **Genetic study of Caucasian brown frogs and wood mice.**

### Work experience:

Rector's adviser in research at Ilia State University (12/2022 – present)

Acting Dean, School of Natural Sciences and Engineering, Ilia State University (since Oct. 2014 until Oct. 2022)

Professor, Director, Institute of Ecology, Ilia State University (12/2009 – present)

Professor, Dean, Faculty of Life Sciences, Ilia Chavchavadze State University (05/2006 – 12/2009)

Tbilisi State University, Faculty of Biology. 12.1989-12.1993: Senior Scientific Researcher; Since 12.1993 - 2006: Leading Scientific Researcher.

Institute of Zoology, Georgian Academy of Sciences. 09.1986-11.1989. Scientific researcher.

### Temporary positions:

Soviet-Vietnamese Tropical Center, Hochiminh City, Vietnam. Senior Scientific Researcher. Responsibility: Ecological study of amphibians of southern Vietnam. 08-11.1990.

University of Bonn, Germany. Scientific Researcher in the project "**Amphibiens in Agrarlandschaft**". Project Leader: prof. W. Böhme. Responsibility: population genetic studies within the framework of the Project. <http://www.amphibien-projekt.de/pages/kontakt.html>

### Affiliations as an expert (short-term):

GPC (Georgian Pipeline Company). 06.1996. Review of Literature and Other Sources about Condition of the Environment on the Territory of Georgia along the Early Oil Transportation Pipeline Corridor and Adjacent Territories from Georgia- Azerbaijan Border to Supsa Terminal. Leader of the Zoological Team.

GPC. 08.1998. The distribution and status of European marsh turtle (*Emys orbicularis*) in Colchis lowland, in particular the area of Supsa terminal. Research expert.

GIOC (2001) 04-06. 2001. Baku-Ceyhan pipeline route: environment impact assessment. A member of the zoological team. Responsibility: amphibians and reptiles.

UNEP (United Nations Environment Program) 1996. Georgian Biodiversity Country Study Report. Member of an expert group, member of the editorial board.

Other awards/ programs.

J & K MacArthur individual grant. The project: Tarkhnishvili, D. N., 2000. Amphibians and reptiles of Georgia: what is lost since last 150 years?

RSS (Research Support Scheme). 2001. The project: Land Use and Landscape Conservation in Southern Georgia. Research group leader.

**Languages:** Georgian, Russian, English, German.

**Research interests:** Population ecology/genetics, phylogeography/speciation, habitat modeling, evolution of morphology, Caucasus, relict biodiversity.

**University Courses:** evolution of biological diversity (introductory for 1<sup>st</sup> year BSc-s), general ecology (BSc level), population ecology/ genetics, statistics for biologists (MSc level), multivariate statistics (PhD level)

**Other:** head of the Georgian national commission for determining status of threatened species (National Red List commission) (2006-present). Director of the project "Exploring biodiversity of the Caucasian "biodiversity hotspot" with modern molecular-genetic methods and analytical tools" (GRDF/GNSF CoRE program, 2006). Co-chair of NIG Georgia (<https://www.caucasus-mt.net/>). A Lead author of IPBES Global Biodiversity assessment. Science Committee member of IBOL (International Barcoding of Life)

**Important publications (last 5 years; full list of scientific publications see at <https://scholar.google.com/citations?user=EbTRHQYAAAAJ&hl=en>)**

### **Monographs**

**Tarkhnishvili, D.** 2014. Historical Biogeography of the Caucasus. Nova Science Publishers, Hauppauge (NY)

**Tarkhnishvili, D.N.** and Gokhelasvili, R.K., 1999. The Amphibians of the Caucasus: Advances in Amphibian Research in the Former Soviet Union. Sofia, Bulgaria: Pensoft Publications.

### **Peer-reviewed papers, high-impact journals, last 5 years:**

Ninua, L., **Tarkhnishvili, D.**, & Anderson, C. L. (2023). Genetic structure of Ponto-Caspian trout populations shows gene flow among river drainages and supports resident *Salmo trutta* as a genetically distinct taxon. *Ecology and Evolution*, 13(7), e10335.

**Tarkhnishvili, D.** and Iankoshvili, G., 2023. The farther, the closer: geographic proximity and niche overlap versus genetic divergence in Caucasian rock lizards. *Biological Journal of the Linnean Society*, p.blad034.

Yanchukov, A., **Tarkhnishvili, D.**, Erdolu, M., Şahin, M.K., Candan, K., Murtskhvaladze, M., Gabelaia, M., Iankoshvili, G., Barateli, N., Ilgaz, Ç. and Kumlutaş, Y., 2022. Precise paternal ancestry of hybrid unisexual ZW lizards (genus *Darevskia*: Lacertidae: Squamata) revealed by Z-linked genomic markers. *Biological Journal of the Linnean Society*, 136(2), pp.293-305.

Gavashelishvili, A., Yanchukov, A., **Tarkhnishvili, D.**, Murtskhvaladze, M., Akhvlediani, I. and Kazancı, C., 2021. Landscape genetics and the genetic legacy of Upper Paleolithic and Mesolithic hunter-gatherers in the modern Caucasus. *Scientific reports*, 11(1), pp.1-12.

Barateli, N., **Tarkhnishvili, D.**, Iankoshvili, G., Kokiashvili, L., Dvali, N. and Janiashvili, Z., 2021. Fine-scale analysis of habitat occupancy by Kura lizard (*Darevskia portschinskii*) and its daughter parthenogenetic form (*Darevskia dahli*). *Herpetozoa*, 34, pp.71-81.

Iankoshvili, G. and **Tarkhnishvili, D.**, 2021. Distribution of snakes (Reptilia: Serpentes) in Georgia: Social media networks help to improve scientific knowledge. *Zoology in the Middle East*, 67(3), pp.228-239.

Shakarashvili, M., Kopaliani, N., Gurielidze, Z., Dekanoidze, D., Ninua, L. and **Tarkhnishvili, D.**, 2020. Population genetic structure and dispersal patterns of grey wolfs (*Canis lupus*) and golden jackals (*Canis aureus*) in Georgia, the Caucasus. *Journal of Zoology*, 312(4), pp.227-238.

**Tarkhnishvili, D.**, Yanchukov, A., Şahin, M.K., Gabelaia, M., Murtskhvaladze, M., Candan, K., Galoyan, E., Arakelyan, M., Iankoshvili, G., Kumlutaş, Y. and Ilgaz, Ç., 2020. Genotypic similarities among the parthenogenetic *Darevskia* rock lizards with different hybrid origins. *BMC Evolutionary Biology*, 20(1), pp.1-25.

Galoyan, E., Moskalenko, V., Gabelaia, M., **Tarkhnishvili, D.**, Spangenberg, V., Chamkina, A. and Arakelyan, M., 2020. Syntopy of two species of rock lizards (*Darevskia raddei* and *Darevskia portschinskii*) may not lead to hybridization between them. *Zoologischer Anzeiger*, 288, pp.43-52.

Murtskhvaladze, M., **Tarkhnishvili, D.**, Anderson, C.L. and Kotorashvili, A., 2020. Phylogeny of caucasian rock lizards (*Darevskia*) and other true lizards based on mitogenome analysis: Optimisation of the algorithms and gene selection. *PLoS One*, 15(6), p.e0233680.

**Tarkhnishvili, D.**, Gabelaia, M. and Adriaens, D., 2020. Phenotypic divergence, convergence and evolution of Caucasian rock lizards (*Darevskia*). *Biological Journal of the Linnean Society*, 130(1), pp.142-155.

**Tarkhnishvili, D.**, Barateli, N., Murtskhvaladze, M. and Iankoshvili, G., 2020. Estimating phenotypic heritability of sexual and unisexually reproducing rock lizards (genus *Darevskia*). *Zoologischer Anzeiger*, 285, pp.105-113.

Gabelaia, M., **Tarkhnishvili, D.** and Adriaens, D., 2018. Use of three-dimensional geometric morphometrics for the identification of closely related species of Caucasian rock lizards (Lacertidae: *Darevskia*). *Biological Journal of the Linnean Society*, 125(4), pp.709-717.

Ninua, L., **Tarkhnishvili, D.** and Gvazava, E., 2018. Phylogeography and taxonomic status of trout and salmon from the Ponto-Caspian drainages, with inferences on European brown trout evolution and taxonomy. *Ecology and Evolution*, 8(5), pp.2645-2658.

#### **Other most important publications**

**Tarkhnishvili, D.**, Gavashelishvili, A. and Mumladze, L., 2012. Palaeoclimatic models help to understand current distribution of Caucasian forest species. *Biological Journal of the Linnean Society*, 105(1), pp.231-248.

**Tarkhnishvili, D.**, Thorpe, R.S. and Arntzen, J.W., 2000. Pre-Pleistocene refugia and differentiation between populations of the Caucasian salamander (*Mertensiella caucasica*). *Molecular Phylogenetics and Evolution*, 14(3), pp.414-422.

Murtskhvaladze, M., Gavashelishvili, A. and **Tarkhnishvili, D.**, 2010. Geographic and genetic boundaries of brown bear (*Ursus arctos*) population in the Caucasus. *Molecular Ecology*, 19(9), pp.1829-1841.

**Tarkhnishvili, D.**, Gavashelishvili, A., Avaliani, A., Murtskhvaladze, M. and Mumladze, L., 2010. Unisexual rock lizard might be outcompeting its bisexual progenitors in the Caucasus. *Biological Journal of the Linnean Society*, 101(2), pp.447-460.

Kopaliani, N., Shakarashvili, M., Gurielidze, Z., Qurkhuli, T. and **Tarkhnishvili, D.**, 2014. Gene flow between wolf and shepherd dog populations in Georgia (Caucasus). *Journal of Heredity*, 105(3), pp.345-353.

Weddeling, K., Hachtel, M., Sander, U. and **Tarkhnishvili, D.**, 2004. Bias in estimation of newt population size: a field study at five ponds using drift fences, pitfalls and funnel traps. *Herpetological Journal*, 14(1), pp.1-8.

**Tarkhnishvili, D.**, Hille, A. and Böhme, W., 2001. Humid forest refugia, speciation and secondary introgression between evolutionary lineages: differentiation in a Near Eastern brown frog, *Rana macrocnemis*. *Biological Journal of the Linnean Society*, 74(2), pp.141-156.

**Tarkhnishvili, D.**, Murtskhvaladze, M. and Gavashelishvili, A., 2013. Speciation in Caucasian lizards: climatic dissimilarity of the habitats is more important than isolation time. *Biological Journal of the Linnean Society*, 109(4), pp.876-892.

Pokryszko, B.M., Cameron, R.A., Mumladze, L. and **Tarkhnishvili, D.**, 2011. Forest snail faunas from Georgian Transcaucasia: patterns of diversity in a Pleistocene refugium. *Biological Journal of the Linnean Society*, 102(2), pp.239-250.

**Tarkhnishvili, D.**, 1996. The distribution and ecology of the amphibians of Georgia and the Caucasus: a biogeographical analysis. *Zeitschrift für Feldherpetologie*, 3, pp.167-196.

Gokhelashvili, R. and **Tarkhnishvili, D.**, 1994. Age structure of six Georgian anuran populations and its dynamics during two consecutive years. *Herpetozoa*, 7(1/2), pp.11-18.

**Tarkhnishvili, D.**, Kaya, U., Gavashelishvili, A. and Serbinova, I., 2008. Ecological divergence between two evolutionary lineages of the Caucasian salamander: evidence from GIS analysis. *The Herpetological Journal*, 18(3), pp.155-163.

**Tarkhnishvili, D.** and Serbinova, I., 1993. The ecology of the Caucasian salamander (*Mertensiella caucasica* Waga) in a local population. *Asiatic Herpetological Research*, 5, pp.147-145.

**Tarkhnishvili, D.**, Murtskhvaladze, M. and Anderson, C.L., 2017. Coincidence of genotypes at two loci in two parthenogenetic rock lizards: how backcrosses might trigger adaptive speciation. *Biological Journal of the Linnean Society*, 121(2), pp.365-378.

**Book contributions:**

Zazanashvili, N., Sanadiradze, G., Bukhnikashvili, A., Kandaurov, A. and **Tarkhnishvili, D.**, 2004. Caucasus. *Mittermaier, RA, Gil, PG, Hoffmann, M., Pilgrim, J., Brooks, T., Mittermaier, CG, Lamoreux, J. & da Fonseca, GAB (Eds.), Hotspots revisited, Earth's biologically richest and most endangered terrestrial ecoregions. Sierra Madre: CEMEX/Agrupacion Sierra Madre*, pp.148-153.

Butchart, S., Miloslavich, P., Reyers, B., Subramanian, S.M., Adams, C., Bennett, E., Czúcz, B., Galetto, L. ... **Tarkhnishvili, D.**, Xu, H. (lead authors). 2019. IPBES Global Assessment Report on Biodiversity. Chapter III. Assessing progress towards meeting major international objectives related to nature and nature's contributions to people.

**Tarkhnishvili, D.** 2012. Evolutionary History, Habitats, Diversification, and Speciation in Caucasian Rock Lizards. Pp. 79-120 In: *Advances in Zoology Research, Volume 2* (ed. Jenkins OP), Nova Science Publishers, Hauppauge (NY)

**Tarkhnishvili, D.** 2014. *Rana macrocnemis* (Boulenger, 1885)–Kleinasiatischer Braunfrosch. Pp. 263-293 In: Grossenbacher, K. (ed.), *Handbuch der Reptilien und Amphibien Europas, V. 5*. AULA-verlag, Wiebelsheim.

**Completed PhD supervision**

- 1) Gavashlishvili, Alexander. Ilia State University. Dec. 2009. Predicting species distribution and habitat modeling in the Caucasus.
- 2) Murtskhvaladze, Marine. Ilia State University. Oct. 2012. Studies in speciation and the analysis of animal population structure in the Caucasus.
- 3) Mumladze, Levan. Ilia State University. July 2013. Diversity and geographic distribution of Land Snails in Georgia.
- 4) Chaladze, Giorgi. Ilia State University. July 2015. Biodiversity Modeling and development of Biodiversity Database for Georgia.
- 5) Gratiashvili, Nana. Ilia State University. July 2016. Ecological multidisciplinary study of Caucasian ants *Myrmoxenus tamarae* (Arnol'di, 1968), *Leptothorax scamni* Ruzsky, 1905, and Holoarctoc *Leptothorax acervorum* (Fabricius), (co-supervisor: Prof. Jurgen Heinze, Regensburg University).
- 6) Martkopishvili, Inga. Ilia State University. February 2017. Human diet and medicinal remedies in Georgia's upper Paleolithic, Neolithic, and Bronze Age (co-supervisor: Dr. Eliso Kvavadze, Georgian National Museum).
- 7) Javakhishvili, Zurab. Ilia State University. July 2018. Seasonal bird migrations in the Caucasus and their role in spreading Avian Influenza.
- 8) Gabelala, Mariam. Ilia State University. October 2019. Phylogeny and morphological variation in the rock lizards of the genus *Darevskia*