

Lilit Vardanyan, PhD

Scientific Secretary, Senior Scientific Researcher
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ACADEMIC QUALIFICATION

- March 2006 **Ph.D** in Biological Sciences, Institute of Botany, National Academy of Sciences, Armenia.
Dissertation: The macrophytes of the main rivers and littoral zone of the Lake Sevan basin.
- June 1997 **M.S.** in Biology & Ecology, Department of Biology and Ecology, Armenian State Pedagogical University, 1992-1997, 1st class diploma.
Thesis: The biology, ecology and distribution of *Metasequoia glyptostroboides* in the parks of Yerevan, Armenia.
- June 1992 **Secondary School** (Gold medalist).

APPOINTMENTS

- 2012/May – present Senior Scientist, Scientific Secretary, UNESCO Chair-Life Sciences International Postgraduate Educational Center (LSIPEC), Armenia.
- 2009/Oct – 2011/Apr SI Guest Scholar, Swedish University of Agricultural Sciences, Department of Aquatic Sciences and Assessment, Uppsala, Sweden.
- 2008/Oct – 2011/Aug Scientific Advisor of Rector, Lecturer, Yerevan University, Ministry of Science and Education, Armenia.

- 2005/June – 2006/November Guest Scientific Researcher, National Institute of Oceanography, Goa, India.
- 2002/July – 2006/February Scientific researcher, Institute of Hydroecology and Ichthyology, National Academy of Sciences, Armenia.
- 2002/October – 2003/March PhD student, Institute of Landscape and Plant Ecology, University of Hohenheim, Stuttgart, Germany.
- 2002/September – 2004/September Visiting PhD student, Israel Nature and Parks Authority, Israel.
- 2002/January – April Visiting Scientific Researcher, National Institute of Oceanography, Goa, India.
- 1997/July – 2002/July Junior scientific researcher, Institute of Hydroecology and Ichthyology, National Academy of Sciences, Armenia.

RESEARCH GRANTS AND FELLOWSHIPS

- 01/October/2009 – 01/April/2011 Postdoctoral Guest Scholarship Program from Swedish Institute (SI) at Swedish University of Agricultural Sciences, Department of Aquatic Sciences and Assessment, Uppsala, Sweden.
- 01/January/2006 – 01/April/2009 Research grant from the Volkswagen Foundation. Carried out at University of Hohenheim, Institute of Landscape and Plant ecology, Stuttgart, Germany.
- 15/June/2005 – 15/October/2005 INSA-JRD TATA Fellowship from the Indian National Science Academy. Carried out at National Institute of Oceanography, Goa, India,
- 01/October/2002 – 01/March/2003 DAAD Fellowship from the German Academic Exchange Service. Institute of Landscape and Plant ecology, University of Hohenheim, Stuttgart, Germany.
- 15/January/2002 – 15/April/2002 INSA-JRD TATA Fellowship from the Indian National Science Academy. Carried out at National Institute of Oceanography, Goa, India,
- 01/September/2001 – 01/September/2003 INTAS Fellowship (Belgium) for Young Scientists from the NIS. Carried out Israel Nature and Parks of Authority, Israel.

AWARDS

- 16/Oct/2012 Travel Support Program, Competition Award from National Foundation of Science and Advanced Technologies.
- 25/Feb/2004 “Short Term Travel Grant Program for Armenian Young Scientists and Engineers” Competition Award from National Foundation of Science and Advanced Technologies.
- Award for best presentation at the Workshop “Towards the Int. scientific collaboration”, Yerevan, November 24-26, 2003.
- Biodata published in the Who's Who in Science and Engineering, 10th Anniversary Edition!

RECENT RESEARCH PROJECTS

- Principal Investigator of the “Role of aquatic macrophytes in phytoremediation of toxic heavy metals from freshwater lakes” research project funded by Swedish Institute Oct/2009 – Apr/2011.
- Principal Investigator of the "Development of measures for a sustainable shore management of Lake Sevan (Armenia) on base of shore vegetation as bioindicators by application of remote sensing and GIS techniques" international research project funded by Volkswagen Foundation 01/Jan/2006 – 01/April/2009.
- Project leader of the “Mapping of the nesting and feeding sites of macrophyte using bird species of 5 specified areas at the shore of Lake Sevan” international research project funded by Volkswagen Foundation 01/May/– 31/Aug/2006.
- Project leader of the “Mapping of the macrophyte using fish species of the south-western shore of Lake Sevan” international research project funded by Volkswagen Foundation 01/May/ – 31/Aug/2006.

RESEARCH INTERESTS

Hydrobotany, ecosystem ecology, macrophyte community, aquatic ecology, limnology, drinking water pollution control, heavy metal pollution, phytoremediation, plant physiology and biochemistry, ecotoxicology.

TEACHING EXPERIENCE

- **Assisted** in guiding Masters Students in the Department of Aquatic Sciences and Assessment, Swedish University of Agricultural Sciences, Uppsala, Sweden. October/2009 to April/2011.
- **Teaching** in the Vanevan University, Ministry of Science and Education of Armenia. Jan/2009 to Aug/2011.
- **Assisted in guiding** PhD students in Institute of Hydroecology and Ichthyology, National Academy of Sciences, Armenia. 2003 to 2005.
- **Guest Lecturer** in Graduate Level Courses, Yerevan State University, Armenia. 2003.
- **Supervised** summer trainees and project assistants in Institute of Hydroecology and Ichthyology, National Academy of Sciences, Armenia. 2000 to 2004.
- Volunteered as **social worker cum teacher** for an NGO in educating villagers and high school students. Yerevan, Armenia. 1997 to 2000.
- Volunteered as **private teacher** in Biology and Chemistry for financially challenged high school students. Yerevan, Armenia. 1993 to 1995.

TEACHING INTEREST

Plant ecology, Aquatic Botany, Limnology, Phytoremediation of toxic chemicals, Ecosystem health assessment and management, Water pollution, etc.

FOREIGN COLLABORATIONS

- UNESCO Chair-Life Sciences International Postgraduate Educational Center, Armenia.
- Institute of Landscape and Plant Ecology, University of Hohenheim, Stuttgart, Germany.
- Israel Nature and Parks Authority, Israel.
- National Institute of Oceanography, Goa, India.
- Swedish University of Agricultural Sciences, Uppsala, Sweden.
- Graduate School of Kuroshio Sciences, Kochi University, Japan.
- National Academy of Sciences, Armenia.

PROFESSIONAL AFFILIATIONS

- Research Secretary of All Armenian Research Council.
- Member of Union of Armenian Ecologists.
- Member of International Association for Ecology.
- Member of International Water Association (IWA).
- Member of Aquatic and wetland plant forum.
- Member of Euroscience.
- Member of UBC Botanical garden and centre for Plant Research.
- Member of <BURG> Youth environmental center.
- Member of The European researcher's mobility portal.

REVIEWER

- Journal of Hazardous Materials
- International Journal of Biodiversity and Conservation
- Journal of Environmental Monitoring and Assessment
- Polish journal of Environmental Sciences

LANGUAGE PROFICIENCY

Armenian – Native

Swedish – Moderate

English - Fluent

Bengali - Intermediate

Russian – Fluent

Japanese – Intermediate

COMPUTER SKILLS

Windows, Microsoft Word, Excel, E-mail, Internet, Power Point.

PARTICIPATION IN CONFERENCES AND SYMPOSIUMS

- “Nature conservation problems” Republican scientific conference, Yerevan, Armenia.1998.
- “Lake ecosystems: biological processes, antropogen transformation, water quality”. Int. sci. conf. on lake ecosystems, Minsk- Naroch, Belarus, 1999.

- “Science for production”, Republican sci. conf., Yerevan, Armenia, 1999.
- “The basic questions of selection, seed breeding and cultivation technologies for the vegetable and melon cultures in the XXI century”. Int. sci. conf., Yerevan, Armenia, 2000.
- “Biogeographical and ecological aspects of desertification process in arid and semiarid environments”. Int. sci. conf., Yerevan, Armenia, 2000.
- “The future of ecological science in Armenia”, Republican Youth Sci. Conf., Yerevan, Armenia, 2000.
- “XXI century: Ecological science in Armenia”, II Republican Youth Sci. Conf., Yerevan – Byurakan, Armenia, 2001.
- XXI century: Ecological science in Armenia, III Republican Youth Sci. Conf., Yerevan, Armenia, 2002.
- Symposium der A.F.W.Schimper-Stiftung von H.&E. Walter Hohenheim – Germany, 2002.
- International Conference on Ecorestoration, Dehradun & New Delhi, 14-21 October 2003.
- Int. workshop “Wastewater Hygienisation in Constructed Wetlands, Ponds and Related Systems”, Leipzig – Germany, November, 2003.
- Open Science Conference “Global Land Project”, Morelia, Mexico, December, 2003.
- Int. Workshop on Marine Pollution and Ecotoxicology, Goa-India, February, 2004.
- Quantitative ecosystem Indicators for fisheries management – International Symposium, Paris, France, March, 2004.
- Taal – 2007, 12th International World Lake Conference, Jaipur-India, October, 2007.
- “Protection and Use of Water Resources of South Caucasian Region” International Scientific Conference. Armenia, September, 2008.
- “Climatic impacts on terrestrial and aquatic ecosystems” Focus on Soils and Water (FoSW) International Workshop, Uppsala, Sweden, Oct, 2009.
- Between Europe and the Orient – A Focus on Research and Higher Education in/on Central Asia and the Caucasus. International Conference, Tbilisi, Georgia, May, 2010.
- Seventh Annual Conference on the Physics, Chemistry and Biology of Water, West Dover, Vermont, October 18 – 21, 2012.

INVITES TALKS/SEMINAR SERIES

- The distribution of aquatic macrophytes in Lake Sevan Basin, Armenia; National Institute of Oceanography, Goa, India. 07/March/2002.
- Accumulation of certain metals in water plants from Lake Sevan (Armenia) and Lake Agmon (Israel); Israel Nature and Parks Authority, Rosh-Pinna, Israel. 04/June/2002.
- The use and significance of water plants from Lake Sevan, Armenia; Institute of Landscape and Plant Ecology, University of Hohenheim, Stuttgart, Germany. 15/Feb/2003.
- Current limnological problems of Lake Sevan due its water level lowering; Yerevan State University, Armenia. 12/Oct/2004.
- Concentration of Heavy metals in macrophytes from Lake Sevan (Armenia) and Lake Carambolim (India); National Institute of Oceanography, Goa, India. 25/Sept/2005.
- Role of aquatic macrophytes in phytoremediation of toxic heavy metals from freshwater lakes; Institute of Landscape and Plant Ecology, University of Hohenheim, Stuttgart, Germany. 18/Jan/2006.
- Mapping of the macrophyte using fish species of the south-western shore of Lake Sevan; Institute of Landscape and Plant Ecology, University of Hohenheim, Stuttgart, Germany. 15/April/2008.
- Shore vegetation as bioindicators; Institute of Landscape and Plant Ecology, University of Hohenheim, Stuttgart, Germany. 10/Dec/2008.
- Metal accumulation in aquatic plants; IVM Forskarspanardag in Viks slott, Department of Aquatic Sciences and Assessment, Swedish University of Agricultural Sciences, Uppsala, Sweden, 8/Nov/2009.
- IVM Biodiversity section workshop for the 2010 research grants application round, Swedish University of Agricultural Sciences, Sigtuna, Sweden, 25-26/Feb/2010.
- The macrophytes of the main rivers and littoral zone of the Lake Sevan basin; Department of Aquatic Sciences and Assessment, Swedish University of Agricultural Sciences, Uppsala, Sweden, 31/March/2010.

PUBLICATIONS:**In journals:**

- **Vardanyan L.G.** 1999. Some water plant's growing peculiarity of Sevan basin. Science and techniques, Yerevan, VII-IX, pp. 32-34.
- Mirzoyan S.A., **Vardanyan L.G.** 2001. Human beings and nature. Science and techniques, Yerevan, IV-VI, pp. 14-16.
- **Vardanyan L.G.** 2002. Heavy metals content in aquatic macrophytes from the Lake Sevan Basin. Biological Journal of Armenia, Yerevan, 3-4 (1), pp. 190-198.
- **Vardanyan L.G.**, Ingole B. 2006. Studies on heavy metal accumulation in aquatic macrophytes from Sevan (Armenia) and Carambolim (India) lake systems. Environment International, Elsevier, 32, pp. 208-218.
- De Jaysankar, Nagappa Ramaiah, Narayan B. Bhosle, Anita Garg, **Lilit Vardanyan**, Vinod L. Nagle and Kimio Fukami. 2007. Potential of Mercury-resistant Marine Bacteria for Detoxification of Chemicals of Environmental Concern. Microbes and Environments, Vol. 22(4), pp. 336-345.
- Agyemang T. K., Schmieder, K., Heege T., Heblinski J., Sayadyan H., **Vardanyan L.**, Böcker R. 2007. Historical review of Lake Sevan's surface area using remote sensing & GIS as tools. Verhandlungen des Internationalen Verein Limnologie (SIL). Stuttgart.
- De Jaysankar, N. Ramaiah and **L. Vardanyan**. 2008. Detoxification of Toxic Heavy Metals by Marine Bacteria Highly Resistant to Mercury. Marine Biotechnology. Vol.10 (4), pp. 471-477.
- Agyemang T.K., K. Schmieder, H. Sayadyan, **L. Vardanyan**, J. Heblinsky. 2008. The application of Remote Sensing and GIS techniques in assessing the effects of Lake Sevan water level fluctuation on its littoral zone. Bulletin of State Agrarian University of Armenia. International Scientific Journal. 1 (21), pp 5-9.
- Agyemang T.K., K. Schmieder, T. Heege, J. Heblinski, H. Sajadyan, **L. Vardanyan** and R. Böcker. 2009. Reviewing Lake Sevan's surface area using remote sensing & GIS techniques. Verhandlungen des Internationalen Verein Limnologie (SIL). Vol. 30, Part 8, p. 1264–1266, Stuttgart.
- Heblinski J., Schmieder K., Heege T., Agyemang T.K., Sayadyan H., **Vardanyan L.** 2010. Mapping of water constituents in high mountainous Lake Sevan (Armenia).

Verhandlungen des Internationalen Verein Limnologie (SIL). Vol 30 Part 9, 1453-1455, Stuttgart.

- Agyemang T. K., J. Heblinski, K. Schmieder, H. Sayadyan, **L. Vardanyan**. 2010. Accuracy assessment of supervised classification of submersed macrophytes: the case of the Gavaraget region of Lake Sevan, Armenia. *Hydrobiologia*, DOI 10.1007/s10750-010-0465-7.
- Heblinski J., K. Schmieder, T. Heege, T. K. Agyemang, H. Sayadyan, **L. Vardanyan**. 2010. High resolution satellite remote sensing of littoral vegetation of Lake Sevan (Armenia) as a basis for monitoring and assessment. *Hydrobiologia*. DOI: 10.1007/s10750-010-0466-6.
- Sadayan H., K. Schmieder, **L. Vardanyan**, T. K. Agyemang, J. Heblinski. Landscape planning for lake Sevan basin (first LP case-study in Armenia). Submitted to *Hydrobiologia*.
- **Vardanyan L.**, K. Schmieder, H. Sayadyan, T. Heege, J. Heblinski, T. Agyemang, J. De. Bioaccumulation of heavy metals by aquatic macrophytes from main rivers of Lake Sevan. Submitted to *Environmental Monitoring and Assessment*.

In conferences/seminars:

- Barseghyan A.M., **Vardanyan L.G.** 1999. Transformation of natural flora and plants of peninsula Sevan. Lake ecosystems: biological processes, anthropogenic transformation, water quality. Int. sci. conf. on lake ecosystems, Minsk-Naroch, pp. 96-97.
- **Vardanyan L.G.**, Barseghyan N.A. 1999. Rare and disappearing plants of the river system of Sevan basin. Science for production – Mat. of Rep. Sci. Conf., Yerevan, pp. 41-42.
- Barseghyan A.M., **Vardanyan L.G.** 2000. Wild-growing rare and disappearing edible and spicy-aromatic vegetable plants of Sevan basin. The basic questions of selection, seed breeding and cultivation technologies for the vegetable and melon cultures in the XXI century. Mat. of Int. Sci. Conf., Yerevan, pp. 109-111.
- **Vardanyan L.G.** 2000. On the succession of flora and plants on the exposed grounds of Lake Sevan and riverside areas. Biogeographical and ecological aspects of desertification process in arid and semiarid environments. International scientific conference, Yerevan, pp.70-72.

- **Vardanyan L.G.** 2000. The ecological aspects of flora and plants of Lake Sevan basin's rivers and nearby areas. The future of ecological science in Armenia. Proceedings of Republ. Youth Sci. Conf., Yerevan, pp. 28-30.
- **Vardanyan L.G.** 2001. On the classification of the river system vegetation of the Sevan Basin. XXI century: Ecological science in Armenia. Mat. of the II Rep. Youth Sci. Conf., Yerevan – Byurakan, pp. 24-28.
- **Vardanyan L.G.** 2002. Heavy metals concentration in some dominant aquatic macrophytes from Lake Sevan. XXI century: Ecological science in Armenia. Materials of the III Republican Youth Scientific Conference, Yerevan, pp.117- 121.
- **Vardanyan L.G.,** Ingole B. 2003. Heavy Metal Accumulation in Aquatic Macrophytes and Animals from Lake Sevan (Armenia) and Mandovi Estuary (Goa-India). International Conference on Ecorestoration, Dehradun & New Delhi.
- **Vardanyan L.G.,** Schmider K. 2003. Heavy metal concentration in the water and macrophytes from Lake Constance (Germany): macrophytes as indicators of water quality. International workshop on Wastewater Hygienisation in Constructed Wetlands, Ponds and Related Systems, Leipzig-Germany, p.42.
- **Vardanyan L.G.** 2003. The Influence of Nature Conditions on the Process of Plant Formulation (Sevan Lake-Armenia). Open Science Conference, Morelia-Mexico, E1.7.
- **Vardanyan L.G.,** Ingole B. 2004. Heavy metal accumulation in aquatic macrophytes from physiographically distinct lake systems. Int. Conf. on “Marine pollution and Ecotoxicology” Goa-India, p. 6.
- **Vardanyan L.G.** 2004. The importance of aquatic macrophytes for fisheries in Lake Sevan (Armenia). Quantitative ecosystem Indicators for fisheries management – International Symposium, Paris-France.
- De J., Ramaiah N., Bhosle N.B., Garg A., **Vardanyan L.G.** and Fukami K. 2006. Physiological and genetic analyses of heavy metal detoxification potential of marine bacteria. 7th Asia Pacific Marine Biotechnology Conference (APMBC), Kochi-India, p.98.
- **L. Vardanyan,** K. Schmieder, H. Sayadyan, T. Heege, J. Heblinski, T. Agyemang. 2007. Heavy metal accumulation by certain aquatic macrophytes from Lake Sevan (Armenia). Taal2007; 12th World Lake Conference. Jaipur-India, p.6.

- **L. Vardanyan**, K. Schmieder, H. Sayadyan, T. Heege, J. Heblinski, T. Agyemang, J. De and J. Breuer. 2008. Heavy metal accumulation by certain aquatic macrophytes from Lake Sevan (Armenia). Proceedings of Taal2007: The 12th World Lake Conference. Editors: Sengupta M. and Dalwani R, pp. 1028-1038.
- Agyemang T. K., Sajadyan H., **Vardanyan L.**, Heblinski J., Schmieder K. 2008. The application of remote sensing & GIS Techniques in assessing the effects of Lake Sevan's water level fluctuations on its littoral zone. Proc. Symp. "Ecological Problems of Agriculture of Armenia". Yerevan, Armenia.

Poster presentations:

- **L.G. Vardanyan**, 2004. The importance of aquatic macrophytes for fisheries in Lake Sevan (Armenia); Quantitative Ecosystem Indicators for Fisheries Management. International Symposium, Paris, France.
- J. Heblinski, K. Schmieder, T. Heege, T. Agyemang, H. Sajadyan, **L. Vardanyan**. 2006. Remote Sensing Techniques for Monitoring of Water Constituents of High Mountainous Lake Sevan (Armenia) with MODIS. German Association of Limnology Annual Conference, Dresden, Germany.
- T.Agyemang, K.Schmieder, J.Heblinski, T.Heege, H. Sajadyan, **L.Vardanyan**. 2006. Development of Measures for a Sustainable Shore Management of Lake Sevan (Armenia) on base of Shore Vegetation as Bioindicators by Application of Remote Sensing and GIS. International Symposium "Middle Asia/Caucasus in Scientific focus", Berlin, Germany.
- T.Agyemang, K.Schmieder, J.Heblinski, T.Heege, H. Sajadyan, **L.Vardanyan**. 2010. Progress of standards for a Sustainable Shore Management of Lake Sevan (Armenia) on base of Shore Vegetation as Bioindicators by Application of Remote Sensing and GIS techniques. International Conference "Between Europe and the Orient – A Focus on Research and Higher Education in/on Central Asia and the Caucasus", Tbilisi, Georgia.
- **L. Vardanyan**, J. De, S. Ayrapetyan. 2012. Importance of aquatic macrophytes in controlling water quality. Seventh Annual Conference on the Physics, Chemistry and Biology of Water, West Dover, Vermont.

In books:

- **Vardanyan L.G.** 1998. Flora and plants of the rivers of the Sevan basin. Nature conservation problems. NAS of RA, Yerevan, pp. 48-49.
- **Vardanyan L.G.,** Ingole B. 2002. A report on the heavy metal accumulation in aquatic macrophytes from Lake Sevan (Armenia) and Carambolim Lake (Goa, India). Indian National Science Academy, National Institute of Oceanography, Goa, India, 43p.
- **Vardanyan L.G.** 2006. The macrophytes of the main rivers and littoral zone of the Lake Sevan basin. PhD Thesis, National Academy of Sciences of Armenia, Yerevan, 135p.