



# MR. N.P.P. LIYANAGE

SENIOR LECTURER (GII)  
M.Phil (Ruhuna), B.Sc (Ruhuna)

## PERSONAL



Email: [nuwan@uwu.ac.lk](mailto:nuwan@uwu.ac.lk)

Tel (office): (+94) 553589423

Fax: (+94) 553589423

Skype: nuwanuwu

## FIND ME ON



## EVENTS/ UPDATES

## AREAS OF EXPERTISE

- Fish reproduction biology
- Cage culture
- Molecular biology
- Fish taxonomy
- Biodiversity

## RESEARCH INTEREST

- Aquaculture
  - Fish reproduction biology
  - Seed production of major carps and tilapia
  - Cage culture
  - Fish feed formulation
- Genetics and Biotechnology
- Fish Biology and Taxonomy
- Environmental Science
  - Aquatic toxicology
  - Zebrafish embryonic toxicity
  - Biodiversity

## MEMBERSHIPS

### *Committees*

- Senate Member, Uva Wellassa University
- Member of Vice Chancellors Advisory Committee, Uva Wellassa University
- Member of Faculty Board, Faculty of Animal Science and Export Agriculture, Uva Wellassa University

### *Professional Bodies*

- Technical evaluation committee for Initial Environment Examinations – Uva Province, Central Environmental Authority
- Life member of Sri Lanka Association of Animal Production
- Life member of Sri Lanka Association for Laboratory Animal Science

## PUBLICATIONS

---

### Full papers

- De Silva, M.P.K.S.K. and Liyanage, N.P.P. (2009) Morphological variation of *Puntius bimaculatus* (Cyprinidae) with respect to altitudinal differences and five major river drainages of Sri Lanka. Ruhuna Journal of Science, University of Ruhuna.
- De Silva M.P.K.S.K., Liyanage, N.P.P. and Hettiarachi S. (2006). Intra specific morphological plasticity in three *Puntius* species in Sri Lanka. Ruhuna Journal of Science. 1 (82-95)
- De Silva, M.P.K.S.K. and Liyanage, N.P.P. (2010) A multivariate approach for developing a dichotomous key for identification and differentiation of *Puntius* (Osteichthyes: Cyprinidae) species in Sri Lanka. Journal of the National Science Foundation of Sri Lanka 38(1):15-27.
- Jayamanne, S.C., Thushari, G.G.N., Liyanage N.P.P. (2015) "Production of simulated caviar using Bigeye Tuna (*Thunnus obesus*) roe: Pilot scale study to promote fish roe based value addition sector in Sri Lanka" International Journal of Scientific and Research Publications, Volume 5, Issue 3, March 2015 (ISSN 2250-3153).
- Jinadasa, B.K.K.K., Galhena, C.K. and Liyanage, N.P.P. (2015). Histamine Formation and the Freshness of Yellowfin Tuna (*Thunnus albacares*) Stored at Different Temperature. Cogent Food & Agriculture, (2015), 1: 1028735
- De Silva M.P.K.S.K., Senaarachchi, W.A.R.K., Liyanage N.P.P. (2015). Evaluation of sensory and proximate properties of reservoir grown tilapia (*Oreochromis niloticus*) and cage cultured genetically improved farmed tilapia (gift). International Journal of Fisheries and Aquatic Studies 2015; 2(4): 10-13.
- De Silva, M.P.K.S.K., Senaarachchi, W.A.R.K. and Liyanage, N.P.P. (2015). Establishment and Efficiency Evaluation of a Simple Mini Hatchery for Production of *Oreochromis niloticus* (GIFT strain) Seeds. Ruhuna Journal of Science (in print).
- Jinadasa, B.K.K.K., Mahaliyana, A.S., Liyanage, N.P.P., Jayasinghe, G.D.T.M., (2015). Trace metals in the muscle tissues of skipjack tuna (*Katsuwonus pelamis*) in Sri Lanka. Cogent Food & Agriculture (2015), 1: 1038975
- Silva, E.I.L., Liyanage, N.P.P., Jayawardhana, R.A.S.N., Silva, E.N.S. (2015) Effects of Construction and Operation of Mini Hydropower Plants on Fish Fauna Endemic to Sri Lanka - A Case Study on Kelani River Basin, Eds: Dayawansa, N.D.K., De Silva, R.P., Proceedings of The Water Professionals' Day, At University of Peradeniya. 1: 45-55
- Mahaliyana, A.S., Jinadasa, B.K.K.K., Liyanage, N.P.P., Jayasinghe, G.D.T.M., Jayamanne, S.C., 2015. Nutritional Composition of Skipjack Tuna (*Katsuwonus pelamis*) Caught from the Oceanic Waters around Sri Lankae, American Journal of Food and Nutrition, 3 (4), 106-111
- Silva, E.I.L., Silva, E.N.S., Jayawardhana, R.A.S.N., Liyanage, N.P.P., (2016) The Effects of Escalating Small Hydropower Development on Hill Stream Fish Fauna Endemic to Sri Lanka. ASIA 2016: Sixth International Conference and Exhibition on Water Resources and Hydropower Development in Asia, At Vientiane, Laos.
- De Silva MPKSK, Senaarachchi WARK, Liyanage NPP (2016) Title-Combinatory Effects of Diets with Three Protein Levels and Two Fat Levels on Growth Performance and Fillet Composition of Cage Cultured Genetically Improved Farmed Tilapia (GIFT). J Aquac Res Development S2: 008. doi:10.4172/2155-9546.S2-008
- Jayamanne, S.C., Thushari, G.G.N., Liyanage, N.P.P., Abeyrathne, I.G.S.N.K., (2018) Study on caviar substitute production using readily available freshwater fish species: *Cirrhinus mrigala* (Hamilton, 1822). J.Univ.Ruhuna 2018 6(1):49-54, doi.org/10.4038/jur.v6i1.7894

### Abstracts (recent)

- Mahaliyana, A.S., Liyanage, N.P.P. and Jayamanne, S.C., Jinadasa, B.K.K.K., (2015) Balancing the benefits of protein content and the risks of trace metal toxicity exposure from Skipjack tuna (*Katsuwonus pelamis*) consumption in Sri Lanka, Proceedings of the Research Symposium of Uva Wellasa University, January 29-30, 2015.
- Prabhani, K.G.M. and Liyanage, N.P.P., Somarathna, K.M.D.M., (2015), A preliminary study on the effectiveness of

organic fertilizers for the survival rate of *Catla catla*, Proceedings of the Research Symposium of Uva Wellassa University, January 29-30, 2015.

Kalubowila, K.S.H. and Liyanage, N.P.P., Perera, A., (2015). Analyze the Histamine level in various positions of the Histamine developed Tuna fish. Proceedings of the Research Symposium of Uva Wellassa University, January 29-30, 2015.

Epasinghe, E.D.M., Jinadasa, B.K.K., Liyanage, N.P.P., Abeygunawardhena, E.A.W.R., (2015) Determination of optimal protein and lipid content of feed for farmed catfish *Pangasius sutchi*, Proceedings of NARA Scientific sessions, June 09, 2015.

Mahaliyana, A.S., Jinadasa, B.K.K.K., Jayasinghe, G.D.T.M., Liyanage, N.P.P., Jayamanne, S.C., (2015). Conflict of nutritional benefits vs. biochemical toxicity of skipjack tuna (*Katsuwonus pelamis*) in Sri Lanka. Proceedings of NARA Scientific sessions, June 09, 2015.

Dilini, K.L.N., Wikramaratne, I.U., Liyanage, N.P.P., Gunawardhane, N.D.P. (2015), Evaluation of the Attitude and awareness of the International Resolution on Responsible Fishing: A Case Study on the Multiday Fishermen of Matara. Proceedings of the First International Symposium on Environment and Planning. 23rd – 24th 2015.

Isharini, W.A.U., Epasinghe, E.D.M., Karunaratne, T.A.D.W., Adikari, A.M.A.N., Liyanage, N.P.P., (2016) Examine the Appropriate Ovulation Time to Determine Latency Period of Golden Tinfoil Barb (*Barbonymus schwanenfeldii*) Using Ovaprim<sup>TM</sup>. Proceedings of the 6th Research Symposium of Uva Wellassa University, December 28-29, 2016.

Thilakarathna, W.M.W.S., Epasinghe, E.D.M., Karunaratne, T.A.D.W., Adikari, A.M.A.N., Liyanage, N.P.P. (2016) Strategies to Reduce Larval Cannibalism of *Pangasius sutchi*. Proceedings of the 6th Research Symposium of Uva Wellassa University, December 28-29, 2016.

Rathnayake, R.M.C.P., Liyanage, N.P.P., Athula, J.A., Guruge, K.P.G.K.P., Senaarachchi, W.A.R.K. (2016) Effect of Diets Incorporated with Dried and Autolyzed Shrimp Waste on Growth Performance of Goldfish (*Carassius auratus*). Proceedings of the 6th Research Symposium of Uva Wellassa University, December 28-29, 2016.

Silva, E.N.S., Liyanage, N.P.P., Jayamanne, S.C., (2016) Possible Effects of Climate Change Driven Sea Level Rise on Small Islet Complex of Negombo Lagoon Sea Entrance with Respect to Mangrove Floral Community and Fisheries. Proceedings of the 6th Research Symposium of Uva Wellassa University, December 28-29, 2016.

Jayawardhana, R.A.S.N., Liyanage, N.P.P., Silva, E.I.L., (2016) Effects of Cascade Min-hydropower Plants on Some Aspects of Eco-hydrology of Wee Oya in Kelani River Basin. Proceedings of the 6th Research Symposium of Uva Wellassa University, December 28-29, 2016.

Jayasundara, J.M.N.M., Liyanage, N.P.P., Wijesundera, R.R.M.K.K., Senevirathne, J.D.M., De Silva, D.P.N. (2016) Usability of Fish Haematological Parameters as a Biological Indicator for Freshwater Quality in Badulla District. Proceedings of the 6th Research Symposium of Uva Wellassa University, December 28-29, 2016.

### **Posters**

D.P.N. De Silva, N.P.P. Liyanage (2014) Identification of the most effective dosage of clove oil solution as an alternative for synthetic anaesthetics on Zebra fish (*Danio rerio*), Conference proceedings of the International Conference on Aquatic Sciences and Fisheries, Osaka, Japan, October, 12-13, 2014.

### **Books**

“Cage Construction” – ISBN 978-955-52954-1-3

“Fish Culture in Cages” – ISBN 978-955-52954-3-7

“Pictorial guide for some selected Aquatic plants in Sri Lanka” – ISBN 978-955-52954-7-5

“Cultivable Exotic Freshwater Fish Species in Sri Lanka” (manuscript)

### **Reports**

Variability analysis of the aquaculture productive models implemented in the south of Sri Lanka

A review of the historical and current status of the fisheries sector along the eastern coast of Sri Lanka

## Leaflets

“Cage Culture in Inland Reservoirs

## RESEARCH PROJECTS

---

### Ongoing

A study on gonadal development of Indian Major Carps stocked in selected manmade reservoirs of Sri Lanka ((UWU/RC/2018/005), **Principle investigator – N.P.P. Liyanage**

Assessing the ecological and touristic values of selected waterfalls in Uva province” (UWU/RC/2018/001), **Principle investigator – C.J.P. Kulathilaka**, Co-investigators – T.M.P.S.I. Thennakoon, J.P.R.C Ranasinghe, **N.P.P. Liyanage**, J.D.M. Senevirathne, G.G.N. Thushari

### Completed

A comparative study on ancient and contemporary fisheries management systems in manmade reservoirs of Sri Lanka (UWU/RC/2018/030), **Principle investigator – T.M.P.S.I. Thennakoon**, Co-investigators – **N.P.P. Liyanage**, C.J.P. Kulathilaka, J.D.M. Senevirathne

Association between Pathology of Disease Caused by *Aeromonas* spp. in Fresh Water Ornamental Fish and the Virulence of Pathogen” (UWU/RC/2018/018), **Principle investigator – M.S Kurukulasooriya**, Co-investigators – **N.P.P. Liyanage**,

Morphological and molecular taxonomic investigation of *Bohadschia* (sea cucumber) species in the sea in Sri Lanka (UWU/RC/2018/028). **Principle investigator – J.D.M. Senevirathne**, Co-investigators – **N.P.P. Liyanage**, G.G.N. Thushari.

Assessment of plastic pollution effects on coastal ecosystems in southern province of Sri Lanka (UWU/RC/2018/029). **Principle investigator – G.G.N. Thushari**, Co-investigators – J.D.M. Senevirathne, **N.P.P. Liyanage**,

Production of value added products using tilapia: A preliminary approach to increase tilapia fishery sector (UWU/RC/2018/035). **Principle investigator – S.C. Jayamanne**, Co-investigators – G.G.N. Thushari, A.P. Abeygunawardhana, J.D.M. Senevirathne, **N.P.P. Liyanage**.

Assessment of Impacts of Alien faunal species on the native aquatic fauna in selected minor tanks in Badulla district: A conservational approach. **Principle investigator – S.C. Jayamanne**, Co-investigators – G.G.N. Thushari, **N.P.P. Liyanage**, J.D.M. Senevirathne,.

Trace metal concentrations of freshwater food fishes in Uva Province, Sri Lanka. Funded by the Uva Wellassa University through Capital Grants (UWU/R/G/2015/25), **Principle investigator – Mr. NPP Liyanage**, Co-investigators – Mr. AS Mahaliyana, Dr SC Jayamanne.

Acute toxicity effect of atrazine, diuron and diazinon on zebrafish (*Danio rerio*) embryos” Funded by the Uva Wellassa University through Capital Grants (UWU/R/G/2015/26), **Principle investigator – NPP Liyanage**, Co-investigators – Dr SC Jayamanne, N.F.A. Fasmina.

Genetic determination of stock structure of blue swimming crab (*Portunus pelagicus*) in Sri Lanka, Funded by the Uva Wellassa University through Capital Grants (UWU/R/G/2015/26), **Principle investigator – NPP Liyanage**, Co-investigators – Dr SC Jayamanne, G.M.G.M.M. Wickrama.

Growth performances of cage cultured Genetically Improved Farmed Tilapia (GIFT) under different stocking densities, dietary regimes and to establish a farmer operated, low cost, simple technology mini hatchery with optimized conditions for GIFT fry production, Funded by transforming University of Ruhuna to International Status Research grant 2012, (RU/DVC/Pro 143), Principle Investigator – Prof MPKSK de Silva., **Co-investigators – N.P.P. Liyanage**

Identification of potential for development of aquatic plants and ornamental fish culture in Uva Province, Funded by Sri Lanka Council for Agricultural Research Policy ( NARP/11/UWU/ASEA/02), Principle Investigator – Dr SC Jayamanne, Co-investigators – RMGN Rajapakshe, **NPP Liyanage**.

Production of caviar using readily available fish species in Sri Lanka, Funded by Sri Lanka Council for Agricultural Research Policy (NARP/11/UWU/ASEA/03), Principle Investigator – Dr SC Jayamanne, Co-investigators – GGN Thushari, **NPP Liyanage**.

Spatial distribution, morphological plasticity and taxonomic relationships of *Puntius* species of Sri Lanka (M. Phil. Research).

Genetic variation of six selected *Puntius* sp. in Nilwala river basin (Undergraduate research).

## ADMINISTRATIVE RESPONSIBILITIES

Duration		Capacity	Institute
From	To		
2018	Present	Head of the Department	Department of Animal Science, Faculty of Animal Science and Export Agriculture, Uva Wellassa University
2017	Present	Director	Center for Open and Distance Learning, Uva Wellassa University
2016	Present	Senior Student Councilor	Uva Wellassa University
2015	Present	Coordinator	Curriculum Revision Committee, Aquatic Resources Technology Degree Programm
2014	2016	Student Councilor	Uva Wellassa University
2009	2016	Academic Sub-warden	Uva Wellassa University
2015		Coordinator AQUA 2015 Fisheries and Aquaculture forum	Uva Wellassa University
2015	2017	Resource Person & Member	Curriculum Revision Committee, Animal Science Degree Programme
		Former Secretary to the Course committee	Department of Animal Science

## CAREER HISTORY

Duration		Capacity	Institute
From	To		
2018	Present	Senior Lecturer (GII)	Department of Animal Science, Uva Wellassa University
2016	2018	Visiting Lecturer	Department of Fisheries, University of Jaffna
2013	2015	Lecturer	Department of Animal Science, Uva Wellassa University
2010	2013	Lecturer (Probationary)	Department of Animal Science, Uva Wellassa University
2009	2010	Temporary Lecturer	Department of Animal Science, Uva Wellassa University
2005	2009	District Aquaculture Extension Officer	National Aquaculture Development Authority of Sri Lanka
2005	2005	Development Assistant	National Programme for Tuberculosis Control and Chest Disease (Ministry of Health)
2004	2005	Research Assistant	Department of Zoology, University of Ruhuna
2002	2004	Demonstrator	Department of Zoology, University of Ruhuna

## TEACHING

---

### ***Uva Wellassa University***

- AQT 101-1 Principles in Aquaculture
- ANS 101-2 Introduction to Animal Production
- AQT 114-3 Biology, Anatomy and Physiology of Aquatic Organisms
- AQT 172-1 Living Aquatic Resources and Management
- AQT 221-2 Fish Seed Production and Larval Rearing
- ANS 201-1 Inland Aquatic Resources and Management
- AQT 224-2 Farm Designing and Construction
- AQT 431-2 Advanced Techniques in Aquatic Farming Systems
- ANS 403-2 Scientific Writing and Project Cycle Management

### ***University of Jaffna***

- FIS 406 MC2 Fish Genetics and Biotechnology

## SUPERVISION

---

### ***Higher Degrees Supervised***

M.Phil:

Student: Ruwan K Senarachchi

“Growth performances of cage cultured Genetically Improved Farmed Tilapia (GIFT) under different stocking densities, dietary regimes and to establish a farmer operated, low cost, simple technology mini hatchery with optimized conditions for GIFT fry production”

Other Supervisors: Prof Kumudu de Silva

### ***Undergraduate research supervised (Selected)***

- Confirmatory identification of scad fish (*Decapterus* sp.) using molecular and morphological data
- Optimization of protein and lipid ratio for the growth of farmed catfish (*Pangasius suchi*)
- Production of simulated caviar using readily available fish species
- A study on plankton, physico-chemical parameters and nutrient interactions towards primary productivity in the Bar reef ecosystem in Sri Lanka
- Preliminary Study on Effect of feeding frequency on survival rate and growth of Catla (*Catla catla*) post larvae
- A review of export trade of indigenous freshwater fish species in Sri Lanka and their conservation issues
- Optimizing minimal quantity of methyl testosterone for sex reversal of Tilapia
- The effect of stocking density on the growth and survival of tilapia (*Oreochromis niloticus*) fry during nursery period
- The preliminary study on impact of cooling water discharge of coal power plant on marine environment in Norochcholai area.
- Application of GIS technology to identify potential areas for aquaculture in Badulla district in Uva province
- Use of underutilized fish species as a protein supplement in juvenile koi carp (*Cyprinus carpio*) feed
- A study on producing an artificial diet for Indian carp (*Labeo rohita*) fry using locally available, low-cost ingredients

- Potential Impacts of Sea Level Rise on Small Island Environment of Negombo Lagoon Mouth
- Study on Toxicity Effect of Common Organophosphate Pesticides Used in Sri Lanka on Zebrafish (*Danio rerio*) Embryo
- Impacts of Cascade Mini hydropower Plants on Some Ecological Aspects of Wee Oya in Kelani River Basin