

Dr. Utpal Singha Roy

Assistant Professor (W.B.E.S.)

Zoology

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Specialization: Ecology

Major Interest Areas: Ecotoxicology, Evolutionary Biology, Ethology, Wetland Ecology, Wildlife Conservation

Academic Credentials:

- Assistant Professor (April 2010-Till date): West Bengal Education Service (W.B.E.S)
- Ph.D. (October 2008-May 2015): Jadavpur University, Kolkata, India
- M.Sc. (2003-2005): University of Calcutta, Calcutta, India

Teaching Experience

- P. R. Thakur Government College – September 2019 - Till date
- Durgapur Government College – April 2010 - September 2019

Courses taken:

- M Sc Conservation Biology (according to the curriculum of Burdwan University and Kazi Nazrul University)
- M Sc Zoology (according to the curriculum of Netaji Subhas Open University)
- B Sc Zoology (Honours and Generic courses, according to the curriculum of Burdwan University, Kazi Nazrul University and West Bengal State University)

Research Interest:

- Larvicidal activities of phytochemicals
- Animal diversity and abundance in relation to habitat heterogeneity
- Limnology

Research Grants Received:

- 2021-2024 as Co-PI: DSTBT, Government of West Bengal (4 lakhs)
- 2015-2017 as PI: UGC MRP (3 lakhs)

Research Experience:

- October 2008 - May 2015: Doctoral Research Fellow of Jadavpur University, Kolkata. Supervisors: Dr. S. K. Mukhopadhyay & Prof. S. Datta. Major Topic of Research: Partitioning processes of unwanted elements within biosystems with special reference to the implication of metallothionein in detoxification processes.

List of Publications:

1. Roy US (2023). Diversity of termites from Durgapur Government College Campus, Paschim Bardhaman, West Bengal, India. International Journal of Ecology and Environmental Sciences. 49(6): 651-653.
2. Roy US (2023). Spatiotemporal occurrence of odonata fauna with reference to habitat quality from two different study sites of Durgapur, West Bengal, India. Advances in Zoology and Botany. 11(5): 317-335.

3. Roy US (2023). Acute toxicological effect of composite industrial effluent on Zooplankton (*Moina* sp.). Journal of Indian Water Works Association. 55(2): 136-141.
4. Chakraborty M, Baidya P, Roy US (2023). Butterfly diversity along a short trekking route inside Buxa Tiger Reserve (National Park), West Bengal, India. Species. 24: 1-15.
5. Adhurya S, Gayen D, Chakraborty M, Roy US (2023). A study of avian diversity in Durgapur Government College Campus, West Bengal, India. The Holistic Approach to Environment. 13(2): 48-62.
6. Das N, Saha S, Roy US (2022). Studies on phytochemical analysis, antioxidant, antibacterial and larvicidal properties of the *Acacia nilotica* fruit extracts. Mapana Journal of Sciences. 21(4): 47-72.
7. Roy US (2022). A report on health and functioning of an urban, perennial lake of West Bengal, India with reference to waterbird colonization. Indian Hydrobiology. 21(2): 89-96.
8. Roy US (2022). A scoping study of east kolkata wetlands – A Ramsar site. Journal of Indian Water Works Association. 54(4): 273-275.
9. Mukherjee A, Roy US (2021). Community structure and foraging guilds of winter avifauna of an urban, perennial wetland of West Bengal, India. International Journal of Conservation Science. 12(1): 281-290.
10. Gayen D, Dey S, Roy US (2021). Additional report of anurans from Durgapur subdivision, Paschim Bardhaman, West Bengal. Zoo's Print. 36(1): 33-39.
11. Mukherjee A, Roy US (2021). Role of physicochemical parameters on diversity and abundance of ground-dwelling, diurnal ant species of Durgapur Government College Campus, West Bengal, India. Munis Entomology & Zoology. 2021, 16(1): 366-380.
12. Chakraborty M, Roy US (2019). Butterfly diversity along a forest track inside Panchet Hill (Garh Panchkot), Purulia, West Bengal, India. Communicue. 12(1): 47-56.
13. Adhurya S, Adhurya S, Roy US (2019). Rapid degradation of wetlands and its impact on avifauna: A case study from Ambuja Wetland, West Bengal, India. Indian BIRDS. 15(2): 43 – 48.
14. Gayen D, Dey S, Dey AK, Roy US (2019). Fate of Snakes in an Urban Landscape – A report from Durgapur, Paschim Bardhaman, West Bengal, India. Zoo's Print 34(1): 12 – 17.
15. Chattopadhyay S, Dey S, Roy US (2018). On the diversity of the vertebrate fauna (excluding fishes) of Panchet Hill (Garh Panchkot), Purulia, West Bengal, India. Journal of Threatened Taxa 10(15): 12979 – 12985.
16. Adhikari A, Goswami AR, Roy US, Aich A, Datta K, Mukhopadhyay SK (2018). Effect of a total solar eclipse on the surface crowding of zooplankton in a freshwater lake ecosystem S Limnology 19(2): 253 – 270.
17. Gayen D, Dey S, U S. Roy (2017). Diversity of snakes in and around Durgapur City, West Bengal, India. Reptile Rap#176; in: Zoo's Print 32(9): 17 – 22.
18. Goswami AR, Roy US, Aich A, Chattopadhyay B, Datta S, Mukhopadhyay SK (2017). Efficiency of a fishpond at East Calcutta wetlands in improvement of water quality. Environmental Engineering & Management Journal 16(2): 361 – 371.
19. Adhurya S, Banerjee M, Pal AK, Roy US (2017). Early winter avifaunal diversity from Buxa Tiger Reserve and Rasikbeel Wetland Complex of northern part of West Bengal, India. Our Nature 14(1): 39 – 46.
20. Nayak A, Roy US (2016). An observation on the Odonata fauna of the Asansol-Durgapur industrial area, Burdwan, West Bengal, India. Journal of Threatened Taxa 8(2): 8503 – 8517.
21. Mukherjee A, Dey S, Roy US (2016). An observation on Odonata fauna of Gandheswari River bank and adjoining fields and cultivated lands in Bankura District of West Bengal, India. Annals of Experimental Biology 4(1): 17 – 24.

22. Adhurya S, Adhurya S, Roy S, Roy US (2015). Report on range extension of eight lesser-known avian species from Durgapur Ecogion, West Bengal, India. *Annals of Experimental Biology* 3 (4): 1 – 6.
23. Changder S, Adhurya S, Roy US, Banerjee M (2015). A report on midwinter bird diversity from Mangalajodi wetland, Odisha. *ZOO's PRINT* XXX 12: 1 – 5.
24. Nayak A, Adhurya S, Roy US (2015). First record of common babbler *Turdoides caudata* (Timaliidae) from Burdwan District, West Bengal and range extension to Eastern India. *ZOO's PRINT* XXX 7: 12 – 14.
25. Mukherjee A, Pal AK, Roy US (2015). Winter avian population of Gandheswari River bank in Bankura District of West Bengal, India. *Annals of Experimental Biology* 3(2): 5 – 9.
26. Mukherjee A, Pal AK, Roy US (2015). A review of the present status, threats and conservation strategies of wetlands of India with special reference to its bird diversity. *Communique* 9(1): 11 – 16.
27. Roy US, Dey S (2015). Wealth from waste: a review of wastewater-fed fishponds of East Kolkata Wetland Ecosystems. *Communique* 9(1): 17 – 20.
28. Roy US, Dey S (2015). Studies on otolith bone of Nile Cichlid (*Oreochromis niloticus*). *Annals of Experimental Biology* 3(1): 24 – 28.
29. Dey S, Roy US, Chattopadhyay S (2015). Effect of heat wave on the Indian flying fox *Pteropus giganteus* (Mammalia: Chiroptera: Pteropodidae) population from Purulia District of West Bengal, India. *Journal of Threatened Taxa* 7(3): 7029 – 7033.
30. Aich A, Goswami AR, Roy US, Mukhopadhyay SK (2015). Ecotoxicological assessment of tannery effluent using guppy fish (*Poecilia reticulata*) as an experimental model: A biomarker study. *Journal of Toxicology and Environmental Health Part A* 8(4): 278 – 286.
31. Roy US, Pal A, Pal AK (2014). Avifaunal diversity from an urban region of West Bengal, India for an annual cycle. *Manan* 1(2): 1 – 10.
32. Roy US, Goswami AR, Aich A, Chattopadhyay B, Datta S, Mukhopadhyay SK (2013). Changes in physicochemical characteristics of wastewater carrying canals after relocation of Calcutta tannery agglomerates within the East Calcutta Wetland ecosystem (a Ramsar site). *International Journal of Environmental Studies* 70(2): 203 – 221.
33. Dey S, Roy US, Pal A (2013). Studies on fish fauna at Durgapur barrage and its adjacent wetland areas with an eye to the physico-chemical conditions of Damodar River from Durgapur, West Bengal, India. *Journal of Applied Sciences in Environmental Sanitation* 8(1): 17 – 22.
34. Dey S, Roy US, Chattopadhyay S (2013). Distribution and abundance of three populations of Indian flying fox (*Pteropus giganteus*) from Purulia district of West Bengal, India. *Taprobanica* 05(01): 60 – 66.
35. Roy US, Aich A, Chattopadhyay B, Datta S, Mukhopadhyay SK (2013). Studies on the toxicity of composite tannery effluent using guppy (*Poecilia reticulata*) as a fish model. *Environmental Engineering and Management Journal* 13(3): 557 – 563.
36. Roy US, Mukherjee M, Mukhopadhyay SK (2012). Butterfly diversity and abundance with reference to habitat heterogeneity in and around Neora Valley National Park, West Bengal, India. *Our Nature* 10: 53 – 60.
37. Banerjee P, Pal A, Roy US, Mukhopadhyay SK (2012). Avifaunal Diversity from an urban perennial freshwater lake of West Bengal, India with special references to limnochemistry and anthropogenic interventions. *Panchakotessays* 3(1): 32 – 42.
38. Roy US, Aich A, Goswami AR, Sen AK, Mukhopadhyay SK (2012). Winter avian population of River Brahmaputra in Dibrugarh, Assam, India. *ZOO's PRINT* XXVII (12): 17 – 19.
39. Pal A, Dey S, Roy US (2012). Seasonal diversity and abundance of herpetofauna in and around an industrial city of West Bengal, India. *Journal of Applied Sciences in Environmental Sanitation* 7(4): 281 – 286.

40. Roy US, Banerjee P, Mukhopadhyay SK (2012). Study on avifaunal diversity from three different regions of North Bengal, India. *Asian Journal of Conservation Biology* 1(2): 120 – 129.
41. Roy US, Mukhopadhyay SK (2012). Wings no help to flee: Impact of Climate Change on Bird Migration: a review. *Academic Journal Hooghly Mohsin College* 7(1): 26 – 36.
42. Roy US, Chattopadhyay B, Datta S, Mukhopadhyay SK (2011). Metallothionein as a biomarker to assess the effects of pollution on Indian major carp species from wastewater-fed fishponds of East Calcutta wetlands (a Ramsar site). *Environmental Research, Engineering and Management* 4 (58): 10 – 17.
43. Goswami AR, Roy US, Aich A, Chattopadhyay B, Mukhopadhyay SK (2011). Spatiotemporal variations in diversity, abundance and primary productivity of planktonic algae in wastewater-fed fishponds at East Calcutta wetlands. *Nebio Vol II, Issue 4*: 42 – 51.
44. Roy US, Pal A, Banerjee P, Mukhopadhyay SK (2011). Comparison of avifaunal diversity in and around Neora Valley National Park, West Bengal, India. *Journal of Threatened Taxa* 3(10): 2136 – 2142.
45. Roy US, Goswami AR, Aich A, Mukhopadhyay SK (2011). Changes in densities of waterbird species in Santragachi Lake, India: Potential effects on limnochemical variables. *Zoological Studies* 50(1): 76 – 84.
46. M. Jain, Roy US, Mukhopadhyay SK (2011). Indirect evidences of wildlife activities in sholas of Western Ghats, a biodiversity hotspot. *Vestnik zoologii* 45(2): 153 – 159.
47. Roy US, Mukhopadhyay SK (2010). Nanoplankton colonization on artificial substrate in a large perennial freshwater pond of West Bengal, India. *European Journal of Applied Sciences* 2(3): 94 – 97.
48. Chattopadhyay B, Roy US, Mukhopadhyay SK (2010). Mobility and bioavailability of chromium in the environment: Physico-chemical and microbial oxidation of Cr (III) to Cr (VI). *Journal of Applied Science & Environmental Management* 14(2): 97 – 101.
49. Chatterjee A, Jain M, Roy US, Mukhopadhyay SK (2008). Limnochemical factors influencing the seasonal population density, secondary production, and calcium-to-tissue ratio in the freshwater limpet *Septaria lineata* (Archaeogastropoda: Neritidae). *Turkish Journal of Zoology* 32: 245 – 252.
50. Chattopadhyay B, Goswami AR, Roy US, Aich A and Mukhopadhyay SK (2008). Amelioration of effluent toxicity: Nature's handwork. *Indian Leather* 42: 31 – 38.
51. Aich A, Roy US, Mukhopadhyay SK (2006). Cooperation as an evolutionary consequence. *Journal of Environment and Sociobiology* 3(2): 153 – 167.

List of Books/Book Chapters:

- Roy US (2021). Avifaunal diversity of Brahmaputra River. In: *The Restless River: Yarlung Tsangpo-Siang-Brahmaputra-Jamuna*, edited by Pangare, Ganesh; Nishat, Bushra; Liao, Xiawei; Qaddumi, Halla Maher. Published by World Bank, Washington, DC. © World Bank.
- Dey S, Roy US (2018). Studying Red Panda under Captivity at The Padmaja Naidu Himalayan Zoological Park, Darjeeling, India., LAP LAMBERT Academic Publishing.
- Roy US, Mukhopadhyay SK (2018). Impact of climate change on bird migration: a case study from an urban, perennial, freshwater wetland in West Bengal, India. In: *The climate on the edge – a collection of evidences, impacts and trends*, edited by A. Ghoshal., Published by: Triveni Devi Bhalotia College, Raniganj, West Bengal, p 67 – 72.
- Roy US, Mukhopadhyay SK (2017). Winter avian aggregation at Santragachi jheel: An urban wetland in West Bengal, India. In: *Exploration, Exploitation, Conservation and Management - Vision and Mission*, edited by S. Saha, M. Manna, J. Ghosh, S. Podder, E. Haque, S. Guria and S. Dey. Scientific Publishing House "DARWIN", 22/12 Adama Mickiewicza Street, 78-520 Zlocieniec, Poland, p 201 – 207.

- Mukhopadhyay SK, Roy US, Adhikary S (2015). Methodology in field biology. In: Contemporary laboratory and field experiments in Zoology; Proceedings of a higher education department, Government of West Bengal sponsored national level workshop. Published by Pages and Chapters, BE-24, Salt Lake City, Kolkata – 700064, p 23 – 35.
- Roy US and Mukhopadhyay SK (2014). Strategies for regaining avian paradise. In: Siksha: Pragati-Durgati, Collection of essays on educational progress and retrogress. Published from Biswa Bangiya Prakashan, Kolkata, pp 175 – 181.
- Roy US (2011). Metallothionein – A Queer Protective Protein in Biosystem. In: Basic Science: Prospects and Future Challenges, edited by S. Bhattacharjee and A. Panigrahi. Government of West Bengal, Hooghly Mohsin College, Chinsurah, West Bengal, pp 142 – 150.

Patents (if any):

- None

List of Honours/Awards:

- Qualified National Eligibility Test (NET) in Life Sciences, June 2005

Membership in scientific bodies:

- None

Editor/or Editorial Board Member/Reviewer:

- Member of the reviewer's board in Journal of Animal Diversity (<https://jad.lu.ac.ir/page/24/Reviewers-Section>)

Lecture Presentations:

- International Korkut Ata Scientific Researches Conference, Osmaniye Korkut Ata University, Turkey, June 28-30, 2022; talk title: “Mosquito larvicidal activity of *Ziziphus mauritiana* and *Acacia nilotica* against *Aedes*” – Roy US, Das ND.
- Six Day e-Workshop on Statistics and Geospatial Techniques in Biology, jointly organized by the Department of Conservation Biology and Internal Quality Assurance Cell (IQAC), Durgapur Government College, January 17-22, 2022; talk title: “Census and Sampling Techniques for Birds” – Roy US.
- ISPEC 8th International Conference on Agriculture, Animal Sciences and Rural Development December 24-25, 2021 / Bingol, Turkey; talk title: “A study on succession pattern of rotifer species on artificial substratum (polyurethane foam units) from a freshwater lake” – Roy US.
- International SIIRT conference on scientific research, November 5-7, 2021 / Siirt University, talk title; “Innate immunity as an indicator of trace metal stress in fish species of wastewater-fed fisheries” – Roy US.
- 29th of October (Republic Day) Symposium on Scientific Research- 3 October 29-30, 2021 / Ankara, Turkey, talk title; “Wastewater-fed pisciculture: vulnerability vis-à-vis opportunity” – Roy US.
- UMTEB International Congress on Vocational & Technical Sciences-XI, September 3-5, 2021 / Ankara, Turkey, talk title; “Study of migratory waterbirds as an indicator of wetland health from selected wetlands of West Bengal, India” – Roy US.
- Interdisciplinary international web seminar on Modern Trends in Humanities, Science & Technology and Social Sciences for Sustainable Development organized by A. P. C. Roy Govt. College, West Bengal, in collaboration with UGC-Human Resource Development Centre, University of North Bengal, West Bengal,

September 23–24, 2021, talk title; “A comparative account of winter avifaunal assemblage from selected urban and protected wetlands of West Bengal, India” – Roy US.

- One Day Webinar commemorating the International Day for Biological Diversity on Biodiversity of Bengal: Least trodden Trails, jointly organized by the Internal Quality Assurance Cell (IQAC) and P.G. Department of Conservation Biology, Durgapur Government College, May 22, 2021, talk title; “Status of migratory waterbirds from selected wetlands of West Bengal” – Roy US.
- Workshop on Conservation of Migratory and Residential Birds, organized by Divisional Forest Office, Panchet Division, Government of West Bengal, February 3, 2018, talk title; “Ecological significance and conservation strategies of migratory and residential birds” – Roy US.
- International Conference on 7th India Biodiversity Meet 2019, Indian Statistical Institute, Kolkata, November 19-21, 2019, talk title; “Colonization dynamics of rotifers on artificial substratum (polyurethane foam units) from a large perennial open-cast pit lake” – Roy US, Bhattacharjee K.
- National seminar on Modern Era of Bio-sciences: Lab to Land, Department of Conservation Biology & Department of Zoology, Durgapur Government College, December 5, 2019, talk title; Observation of avifauna in few pockets of Durgapur” – Roy US.
- 2nd Regional Science & Technology Congress (Western Region), 2017 [2nd RSTC (WR), 2017], University of Burdwan, Burdwan, November 16–17, 2017, talk title; “Spatiotemporal occurrence of odonata fauna with reference to habitat quality from two different study sites of Durgapur, Paschim Bardhaman, West Bengal” – Roy US.
- West Bengal Biodiversity Board Sponsored National Seminar on Exploring the Modern Approach in Biological Science: From Genome to Organism, Chapter –II, Department of Zoology, Sidho–Kanho–Birsha University Purulia, West Bengal; February 21-22, 2017, talk title; “Assessment of odonate species diversity in and around industrial areas of Asansol and Durgapur, West Bengal, India” – Roy US, Nayak AK.
- Workshop on field techniques and methodologies in biology, Department of Zoology for UG and PG studies, Serampore College, Hooghly, January 30-31, 2016, talk title; “Study on migratory birds” – Roy US.
- State level seminar on Impact of pollution: assessment and awareness, Hooghly Women’s College, Hooghly; February 14-15, 2014, talk title; “Wastewater–fed aquaculture: risks of element contamination” – Roy US, Goswami AR, Aich A, Chattopadhyay B, Mukhopadhyay SK.
- UGC sponsored National Level Seminar on Recent Trends in Zoology with Special Emphasis on Animal Diversity, Fisheries and Genetics. Kulti College, Kulti, West Bengal, November 28-29, 2011, talk title; “Sequestration of unwanted metals in fish species from wastewater–fed fishponds of east Calcutta wetlands (a Ramsar site) with special reference to stress and detoxification processes” – Roy US, Mukhopadhyay SK.
- UGC Sponsored Seminar on Faunal Diversity Assessment: Designing Field Studies. RKMVC College, Kolkata, West Bengal, September 9, 2011, talk title; “Avifaunal diversity study: necessary field protocols” – Roy US, Mukhopadhyay SK.
- International Conference on Biodiversity & Aquatic Toxicology. ANU, Nagarjunanagar, Andhra Pradesh, February 12-14, 2011, talk title; “Metallothionein assay for bio–monitoring trace metal stress in cichlids (*Oreochromis niloticus* and *Oreochromis mossambicus*) thriving in contaminated wastewater–fed fishponds in east Calcutta wetlands, a Ramsar site” – Roy US, Chattopadhyay B, Datta S, Mukhopadhyay SK.
- National Seminar on Conservation and Restoration of Lakes Organized by NIH and NEERI, Nagpur, Maharashtra, October 16-17, 2008, talk title; “Comparison of limnochemical features between two large perennial lentic waterbodies in the context of waterbird colonization” – Roy US, Goswami AR, Aich A, Mukhopadhyay SK.