

## Bio-Data

1. Name : **Dr. Onkar Singh Brraich**
2. Designation : **Associate Professor (Fish and Fisheries)**
3. Department : **Zoology and Environmental Sciences,  
Punjabi University, Patiala.**
4. Date of Birth : **08-06-1971**
5. Address for Correspondence : **Department of Zoology and Environmental Sciences, Punjabi University, Patiala -147002, Punjab, India - 147002.**  
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6. Area of Specialization : **Fish and Fisheries, Ornithological Studies, Aquatic Toxicology,  
Wetland and River Ecology, Conservation and Management.**



### 7. Academic Qualifications:

Sr. No.	Degree Held	Year	Board/Univ./ Inst.	% of marks	Div./ Rank	Subjects Taken
1	Ph.D. Zoology (Fish & Fisheries)	2002	Panjab University, Chandigarh	-NA-	-NA-	Fish & Fisheries
2	M.Sc. (Hons.) Zoology	1996	-Do-	61%	1 <sup>st</sup>	Cytogenetics, Immuno., Dev. Bio. Biochem., Physio., Env. Bio., Bio Stat., Computers.
3	B.Sc. (Medical)	1994	-Do-	56%	2 <sup>nd</sup>	Zoology Botany Chemistry
4	10+2 Medical	1991	PSEB, Mohali	58%	2 <sup>nd</sup>	Medical Science
5	Matric	1988	-Do-	70%	1 <sup>st</sup>	Math, English, Science, Punjabi, Hindi, Social Studies

### 8. Membership of Professional Bodies/Organisations/Reviewer of Journals

1. **General Secretary, Punjabi University Environment Society** since 08-05-2018
2. **Member of Academic Council**, Punjabi University, Patiala.
3. Nominated as **State Level Subject Expert Committee Member** in the Subject of **Zoology** by **Deptt. of Higher Education, GoP.**
4. Member **Expert of Committee** formed by office of the **Hon'ble Speaker, Punjab Vidhan Sabha, Govt. of Punjab** on waters.

5. Member of **Centre Governing Committee of Centre for Restoration of Ecosystems of Punjab**, Punjabi University, Patiala since 10-12-2021.
6. Member of **Grievance Redressal Cell**, Punjabi University, Patiala since 3<sup>rd</sup> July, 2023.
7. Member **Scientist from different Biological Disciplines of Institutional Animal Ethics Committee (IAEC)** for the purpose of Control and Supervision of Experiments on Animals (CPCSEA), **Ministry of Fisheries, Animal Husbandry and Dairying, Govt. of India** since 25-11-2022
8. **Member Expert of Department of Fisheries, GoP** to approve action plans of District Patiala under **Pradhan Mantri Matsya Sampada Yojana (PMMSY)** for development of fishery.
9. **Member of Indian Bird Conservation Network (IBCN)** of Bombay Natural History Society, Mumbai.
10. Member of a committee for **Gharial re-introduction programme** at Harike Wetland, Punjab formed by GoP.
11. Life member of **Electron Microscopic Society** of India.
12. Life member of **Society of Environmental Scientists**, India.
13. Member of Board of Studies for Environmental Sciences, Punjab Technical University, Jalandhar.
14. Member of Board of Studies Sant Baba Bhag Singh University University, Jalandhar.
15. Member of Board of Studies Chandigarh University, Gharuan, Mohali.
16. Member of Board of Studies Mata Gujri College, Fatehgarh Sahib.
17. Member of Ethical Committee Baba Ishar Singh College of Pharmacy, Kot-Ise-Khan, Distt. Moga, Punjab.
18. Reviewer of the Journal "Wetlands"
19. Reviewer of the "Journal of Environment Biology"
20. Reviewer of the Journal "Toxicological Reports"

#### **Administrative Experience**

1. **Warden, Hostel for International Students** (From 18-11-2020 to 27-07-2021)
2. **Warden, Research Scholar Flats and R - Type Flats** (From 18-11-2020 to till date)
3. **Warden, Homi Bhabha Hostel** since 3<sup>rd</sup> February, 2021 to till date.
4. **Convener of the Committee** for taking initiatives to promote Green activities as per **NAAC Guidelines** since 14-01-2022.
5. **Nodal Officer**, National Scholarships for Tribal Students (NFST) since 25<sup>th</sup> February, 2022.

#### **9. Professional Recognition/Medals/Awards/Honours/Received**

**S. Year**

**Conferences**

**No.**

1. 2024 **Certified Master Trainer** with Assessor ID – TR411878 for the Qualification Pack of **Fish Net Making** conforming to National Skill Qualification Framework Level – 2.5 under **Agriculture Skill Council of India**.
2. 2024 **Certified Master Assessor** with Assessor ID - AR65724 for the Qualification Pack of **Fish Net Making** conforming to National Skill Qualification Framework Level – 2.5 under **Agriculture Skill Council of India**.
3. 2023 **Certified Master Assessor** with Assessor ID - AR65724 for the Qualification Pack of **Fish Retailer** conforming to National Skill Qualification Framework Level – 3 under **Agriculture Skill Council of India**.
4. 2023 **Certified Master Assessor** with Assessor ID - AR65724 for the Qualification Pack of **Inland Capture Fisherman cum Primary Processor** conforming to National Skill Qualification Framework Level – 3 under **Agriculture Skill Council of India**.
5. 2023 **Certified Master Assessor** with Assessor ID - AR65724 for the Qualification Pack of **Ornamental Fish Farmer** conforming to National Skill Qualification Framework Level – 4 under **Agriculture Skill Council of India**.
6. 2023 Co-chaired a Session in a three Days International Conference on the topic **“The Growth of Biological Sciences in 21<sup>st</sup> Century”** from 2<sup>nd</sup> March to 4<sup>th</sup> March, 2023 organized by Faculty of Life Sciences, Punjabi University, Patiala.
7. 2022 Co-Chaired a session in 16<sup>th</sup> International Conference on Humanizing Work and Work Environment from 14<sup>th</sup> December to 16<sup>th</sup> December, 2022 organized by Department of Sports, Punjabi University, Patiala.
8. 2022 Received Certificate of appreciation for expert evaluator of Rangoli Competition under Ek Bharat Shreshta Bharat Campaign, Punjabi University, Patiala organized by Deptt. of Pharmaceutical Sciences and Drug Research on 17<sup>th</sup> March, 2022.
9. 2022 Received Certificate of appreciation for Coordinator of seven days **“Vigyan Sarvatra Pujyate - Science Week Festival 2022”** from 22<sup>nd</sup> February to 28<sup>th</sup> February, 2022 organized by Department of Biotechnology, Punjabi University, Patiala in collaboration with Punjab State Council for Science and Technology, Chandigarh catalysed and supported by Vigyan Prasar, Department of Science and Technology (GoI), New Delhi.
10. 2019 Invited as Judge for the Oral Presentation Competition in a State Level Seminar for Undergraduate Students on the topic **“Green Technology for Sustainable Development”** by Department of Zoology and Biotechnology, Kumari Vidyavati Anad DAV College for Women, Railway Road, Karnal on

22<sup>nd</sup> February, 2019

11. 2018 Acted as Rapporteur in two Days National Seminar on 19<sup>th</sup> November to 20<sup>th</sup> November, 2018 on the topic “**Environmental Changes and its Impact on Faunal Diversity in Indian Agro-Ecosystem**” organized by Department of Zoology, Punjab Agricultural University, Ludhiana.
12. 2017 Chaired a session in an International Conference in **Zoological Sciences** organized by Deptt. of Zoology and Environmental Sciences, Punjabi University, Patiala from 26<sup>th</sup> October, 2017 to 28<sup>th</sup> October, 2017.
13. 2017 Appointed as **subject Expert to Judge** the **Inter District Science Exhibition** at Government Post-Graduate College, Ambala Cantt. Haryana organized by the Directorate of Higher Education, Haryana on 3<sup>rd</sup> February, 2017.
14. 2016 Acted as Poster Evaluator in the one day Conference entitled “**Dr. S.S. Goraya Memorial Seminar on Recent Advances in Animal Reproduction**” organized by Deptt. of Zoology, Panjab Agricultural University, Ludhiana on 12<sup>th</sup> October, 2016.
15. 2015 Received **Certificate of Appreciation** for participation in **Asian Waterbird Census – Punjab (Ranjit Sagar Dam)** counts held on 23<sup>rd</sup> February, 2015.
16. 2015 Received **Certificate of Appreciation** for participation in **Asian Waterbird Census – Punjab (Nangal Wildlife Sanctuary)** counts held on 18<sup>th</sup> January, 2015.
18. 2014 Received **Certificate of Appreciation** for participation in **Asian Waterbird Census – Punjab (Ranjit Sagar Dam) counts** held on 19<sup>th</sup> February, 2014.
19. 2014 Received **Certificate of Appreciation** for participation in **Asian Waterbird Census – Punjab (Keshopur Miani Community Reserve) counts** held on 23<sup>rd</sup> January, 2014.
20. 2012 Co-Chaired a Session on 22-11-2012 in a National Symposium “**Frontiers of Wetland, Fishery Science & Aquaculture Research in the New Millennium (Wetland-2012)**” organised by Department of Life Science & Bioinformatics, Assam University, Silchar on November 21<sup>st</sup> to 22<sup>nd</sup>, 2012.
21. 2012 Organized one day National Seminar to celebrate “**International Day for Biological Diversity – 2012**” by Deptt. of Zoology and Environmental Sciences, Punjabi University, Patiala on 05-06-2012 funded by Biodiversity Board, Govt. of Punjab and National Biodiversity Authority, Govt. of India.
22. 2011 Organized one day workshop under National Environmental Awareness Campaign (NEAC) Programme of Ministry of Environment and Forests, Govt. of India on the theme “**Biodiversity Conservation**” on 25-03-2011 by department of Zoology and Environmental Sciences, Punjabi University, Patiala.
23. 2011 Nominated as **Resource Person under NEAC (National Environment**

**Awareness Campaign) of Ministry of Environment and Forests, Govt. of India** by Punjab State Council for Science and Technology, Chandigarh from 2011 onward.

24. 2011 Guest of Honour, Resource Person and Chairman of a Technical session in a State level UGC Seminar on **“Global Warming and Biodiversity Conservation”** organized by Deptt. of Zoology J.C. DAV College, Dasuya, Distt. Hoshiarpur on 27<sup>th</sup> and 28<sup>th</sup> January, 2011.
25. 2010 Chaired a Technical session in a National level Conference on **“Environment Degradation and its Impact on Human Kind”** organized by Deptt. of Zoology, Punjabi University, Patiala from 19<sup>th</sup> November to 20<sup>th</sup> November, 2010.
26. 2008 Organized **three days training programme for Master Trainers** under National Green Corps Programme at Golden Jubilee Conference Hall, Panjab University, Chandigarh from 29<sup>th</sup> January to 31<sup>st</sup> January, 2008.
27. 2007 Organized **one day training programme for Master Trainers** by Punjab State Council for Science and Technology, Chandigarh under National Green Corps Programme at MGSIPA Conference Hall, Sector – 26, Chandigarh on 31<sup>st</sup> October, 2007.
28. 2007 Guest of Honour at District Level NGC programme organized by District Education Officer, Fatehgarh Sahib at Govt. Sr. Sec. School, Ghumand Garh on 29<sup>th</sup> August, 2007.
29. 2006 Chief Guest on the occasion of **'World Ozone Preservation Day-2006'** at Shivalik Public School in Mohali and gave a brief lecture on ozone protection.
30. 2001 Invited by the **Youth World Water Forum, The Netherlands** for poster presentation on 25<sup>th</sup> June - 29<sup>th</sup> June, 2001.
31. 2000 Recipient of **Certificate of Appreciation** in **“XXIV Annual Conference on Electron Microscopy and Allied Fields”** organised by the Electron Microscopic Society of India and Panjab University at RSIC/CIL, Panjab University, Chandigarh from 9-11 April, 2000.
32. 1994 Recipient of **Certificate of Appreciation** in organizing the All India Congress of Cytology & Genetics organized by Deptt. of Zoology, Panjab University from 29<sup>th</sup> September-1<sup>st</sup> October, 1994.

## **Awards**

1. 2017 **Got First Poster Presentation Award** on the paper entitled **“Fish fauna of Ranjit Sagar Wetland, Punjab (India)”** in one day National Conference entitled **“Biodiversity and Sustainable Tourism”** on 12-06-2017 organized by Deptt. of Zoology and Environmental Sciences, Punjabi University, Patiala.
2. 2017 **Got Second Award** on the paper entitled **“Status of Fish fauna of Ropar Wetland (Ramsar Site), Punjab (India)”** in two days National Conference

entitled “**Man and Environment**” organized by Centre for Swatch Bharat Swasth Bharat, Punjabi University, Patiala from 10-11 March, 2017.

3. 2016 **Got Best Poster Award** on the paper entitled “**Comparative studies on Total Lipid Content (TLC) and fatty Acid Composition (FAC) from the processing waste of Captured and Cultured Fish, *Labeo rohita* (Hamilton)**” in a Golden Jubilee Celebrations National Conference entitled “**Evolving New Horizons of Zoological Sciences in Human Welfare**” organized by Deptt. of Zoology, Kurukshetra University, Kurukshetra from 23rd to 24th November, 2016. P.29.
4. 2016 **Got third award in the poster** presentation on the paper entitled “**Threatened birds of species of Nangal wetland, Punjab** in a one day conference on the topic “Biodiversity and Swachh Bharat Mission” organized by Department of Zoology and Environmental Sciences, Punjabi University, Patiala in Collaboration with Centre for Swatch Bharat Swasth Bharat Abhyian Mission, Punjabi University, Patiala on 5<sup>th</sup> June, 2016.

#### 10. Scholarships:

S. No.	Type of Fellowship	Name of funding agency	Period	Salary (Rs.) Per month	Nature of duties
1.	SRF	ICAR, New Delhi	1997-2001	Rs. 5000/-	Research on Biological Studies on a Fish, Golden Mahseer, <i>Tor putitora</i> (Ham.)

#### 11. Details of Experience:

Period	Job Description
22-10-09	Presently working as Assistant Professor (Fish and Fisheries) in Deptt. of Zoology and Environmental Sciences, Punjabi University, Patiala since 22-10-2009.
25-07-09 to 21-10-09	Worked as Assistant Professor Zoology at J.C.D.A.V. College, Dasuya, District Hoshiarpur and taught graduate and post graduate classes from 25-07-2009 to 21-10-2009.
18-12-02 to 24-07-09.	Worked as Project Associate (Environment) in Punjab State Council for Science & Technology, Sector-26, Chandigarh from 18-12-2002 to 24-07-09.

#### 12. Published Work (Please specify numbers only):

a. Research Papers **i) National = 23**

**ii) International = 23**

b. Conference/Seminar Presentation: Presented; contributed:

**National: 53**

**International: 5**

**Total: 58**

**Paper Presented: 23**

- 2023 Attended three Days International Conference on the topic **“The Growth of Biological Sciences in 21<sup>st</sup> Century”** from 2<sup>nd</sup> March to 4<sup>th</sup> March, 2023 organized by Faculty of Life Sciences, Punjabi University, Patiala.
- 2018 Attended two Days National Seminar on 19<sup>th</sup> November to 20<sup>th</sup> November, 2018 on the topic **“Environmental Changes and its Impact on Faunal Diversity in Indian Agro-Ecosystem”** organized by Department of Zoology, Punjab Agricultural University, Ludhiana.
- 2018 Attended and presented a poster in the two day National Conference entitled **“Bridging the Gap-Biodiversity and Human Health”** organized by Deptt. of Zoology, Panjab University, Chandigarh from 21<sup>st</sup> to 22<sup>nd</sup> March, 2018.
- 2017 Presented a paper in an International Conference in **Zoological Sciences** organized by Deptt. of Zoology and Environmental Sciences, Punjabi University, Patiala from 26<sup>th</sup> October, 2017 to 28<sup>th</sup> October, 2017.
- 2017 Chaired a session in an International Conference in **Zoological Sciences** organized by Deptt. of Zoology and Environmental Sciences, Punjabi University, Patiala from 26<sup>th</sup> October, 2017 to 28<sup>th</sup> October, 2017.
- 2016 Attended and delivered invited talk in the two day National Conference entitled **“Evolving New Horizons of Zoological Sciences in Human Welfare”** organized by Deptt. of Zoology, Kurukshetra University, Kurukshetra from 23<sup>rd</sup> to 24<sup>th</sup> November, 2016.
- 2016 Presented poster in the one day Conference entitled **“Dr. S.S. Goraya Memorial Seminar on Recent Advances in Animal Reproduction”** organized by Deptt. of Zoology, Punjab Agricultural University, Ludhiana on 12<sup>th</sup> October, 2016.
- 2016 Delivered oral presentation on the topic **"Pollution as potential threat to valuable fish diversity in Harike Wetland (Ramsar Site), Pujnab (India)"** on 8<sup>th</sup> October, 2016 at “UGC sponsored National Conference on Emerging Trends in Biotechnology: A Paradigm to Cleaner and Greener India” organized by Department of Biotechnology, GSSDGS Khalsa College, Patiala.
- 2016 Delivered invited talk on the topic **"Status of Wetlands in Punjab"** on 02-02-2016 organized by Pushpa Gujral Science City, Kapurthala.
- 2016 Delivered invited talk on the topic **"Wetland Conservation in Punjab"** on 22-01-2016 in a National Conference on the Topic **“Emerging Trends in Biological & Agricultural Sciences”** organized by DAV College, Abohar, Punjab.

- 2015 Presented poster in a National Conference on **"Translating Biodiversity Research into Deliverables for Human Welfare"** organized by Department of Zoology, Centre for Advanced Studies (UGC), Panjab University, Chandigarh on March 19-20, 2015.
- 2015 Attended National Seminar Cum Workshop **"Trends in Animal Behaviour Research"** organized by Department of Zoology, MCM DAV College for Women, Sector 36-A Chandigarh. on 02-03-2015.
- 2015 Attended **"31<sup>st</sup> International Punjabi Development Conference"** on organized by Department of Punjabi Language Development Punjabi University, Patiala (Punjab) from 14-01-2015 to 16-01-2015.
- 2014 Delivered invited Talk on the topic **"Fish Diversity of Ranjit Sagar Wetland (National Wetland) Punjab, India"** on 31<sup>st</sup> October, 2014 at International Symposium on "Biodiversity: Status, Utilization and Impact of Challenging Climatic Conditions" organized by Babasaheb Bhimrao Ambedkar University, Lucknow, Uttar Pradesh in Collaboration with the Indian Academy of Environmental Sciences, Haridwar, Uttarakhand, India.
- 2014 Delivered invited Talk on the topic **"Structural alterations by accumulation of heavy metal pollutants in scales of different fish species from Harike wetland (Ramsar Site), India"** on 15<sup>th</sup> September, 2014 at 3<sup>rd</sup> International Conference on Hydrology and Meteorology at Hyderabad International Convention Centre, Hyderabad, India.
- 2014 Delivered invited talk on the topic **"Fish Biodiversity of Wetlands of Punjab"** on 2<sup>nd</sup> February, 2014 during the celebration of World Wetland Day organized by Punjab State Council for Science and Technology, Chandigarh at Harike, Distt. Tarn Taran.
- 2013 Delivered invited talk on the topic **"Status of Wetlands of Punjab"** on 05-02-2013 organized by Punjab Technical University Giani Zail Singh Campus, Bathinda (Punjab).
- 2012 Delivered invited talk on the topic **"Wetland Conservation and Management"** on 14-06-2012 organized by World Wide Fund (WWF) at Harike, Distt. Tan Taran.
- 2012 Lecture delivered in a National symposium on **"Frontiers of Wetland, Fishery Science & Aquaculture Research in the New Millennium (Wetland-2012)"** organized by Department of Life Science & Bioinformatics, Assam University, Silchar on November 21<sup>st</sup> to 22<sup>nd</sup>, 2012
- 2012 Co-Chaired a Session on 22-11-2012 in a National Symposium **"Frontiers of Wetland, Fishery Science & Aquaculture Research in the New Millennium (Wetland-2012)"** organized by Department of Life Science & Bioinformatics, Assam University, Silchar on November 21<sup>st</sup> to 22<sup>nd</sup>, 2012.
- 2012 Plenary lecture delivered in a National Seminar on **"Status of Environment & Biodiversity : R10+20 and Role of Space Technology"** organized by Department of Zoology & Environmental Sciences, Gurukula Kangri, University, Haridwar from 2<sup>nd</sup> to 3<sup>rd</sup> November, 2012.
- 2012 Attended National Conference on **"Innovations in Modern Biology"** organized by



- Department of Zoology, Meerut College of Meerut from 16-03-2012 to 17-03-2012.
- 2011 Guest of Honour, Resource Person and Chairman of a Technical session in a State level UGC Seminar on “**Global warming and Biodiversity Conservation**” organized by Deptt. of Zoology J.C. DAV College, Dasuya, Distt. Hoshiarpur on 27<sup>th</sup> and 28<sup>th</sup> January, 2011.
- 2011 Participated in a one day training workshop on “**Exploring New Vistas in Biodiversity and Research for Sustainable Development**” organized by Deptt. of Zoology, Panjab University, Chandigarh on 24<sup>th</sup> January, 2011.
- 2011 Attended and presented a poster in a National Conference on “**New Vistas in Biodiversity and Research**” organized by Deptt. of Zoology, Panjab University, Chandigarh from 22<sup>nd</sup> to 23<sup>rd</sup> January, 2011.
- 2011 Attended and presented a poster in a State level UGC Seminar on “**Climate Change and Biodiversity Conservation**” organized by Deptt. of Zoology J.C. DAV College, Dasuya, Distt. Hoshiarpur on 27<sup>th</sup> and 28<sup>th</sup> January, 2011.
- 2010 Chaired a Technical session in a National level Conference on “**Environment Degradation and its Impact on Human Kind**” organized by Deptt. of Zoology, Punjabi University, Patiala from 19<sup>th</sup> November to 20<sup>th</sup> November, 2010.
- 2010 Attended and presented a paper in a National level Seminar on “**Biodiversity: The Essence of Life**” organized by Deptt. of Zoology, Govt. College, Sector - 1, Panchkula on 19<sup>th</sup> September, 2010.
- 2010 Attended and presented a poster in a National Conference on “**Advances in Biological Sciences**” organized by Deptt. of Zoology, Panjab University, Chandigarh 29<sup>th</sup> to 30<sup>th</sup> March, 2010.
- 2010 Attended UGC sponsored seminar on “**Wetland Conservation and Management – In view of Global Climate Change**” organized by Deptt. of Zoology, Guru Nanak Dev University, Amritsar on 2<sup>nd</sup> February, 2010.
- 2009 Participated in the “**National Symposium on Biodiversity, Cell and Molecular Biology**” organized by Department of Zoology, Centre for Advanced Studies, Panjab University, Chandigarh at Golden Jubilee Conference Hall from 1<sup>st</sup> to 2<sup>nd</sup> March, 2009.
- 2008 Participated in the “**22<sup>nd</sup> National Symposium on Recent Advances in Zoological Sciences: Application to Agriculture, Environment and Human Health**” organized by Punjab Agricultural University, Ludhiana in collaboration with Indian Society of Life Sciences, Kanpur from 6<sup>th</sup> November – 7<sup>th</sup> November, 2008.
- 2008 Organized and presented poster in the International Conference on “**Climate Change, Biodiversity and Food Security in the South Asian Region**” held on 3<sup>rd</sup> and 4<sup>th</sup> November, 2008 at CII, Chandigarh organized by Punjab State Council for Science and Technology, Chandigarh in collaboration with UNESCO, New Delhi.
- 2008 Participated in the “**Workshop on Grid Connected Renewable Energy and Cogeneration/Independent Power**” organized by Punjab Energy Development Agency

- in collaboration with United States Energy Association and United States Agency for International Development at Confederation of Indian Industry, Sector-31, Chandigarh from 4<sup>th</sup> August – 5<sup>th</sup> August, 2008.
- 2008 Participated in the **“Workshop on The GREEN Olympiad”** organized by The Energy and Research Institute (TERI), New Delhi at Hotel Grand Park, Patiala on 1<sup>st</sup> May, 2008.
- 2008 Participated in the **“National Symposium on Biodiversity, Cell and Molecular Biology”** organized by Department of Zoology, Panjab University, Chandigarh at Golden Jubilee Conference Hall from 26<sup>th</sup> to 27<sup>th</sup> February, 2008.
- 2008 Participated in the **“Prakriti Mela”** organized by Centre for Environment Education, Ahmedabad at Regional Institute of Education, Ajmer, Rajasthan from 11<sup>th</sup> February to 13<sup>th</sup> February, 2008.
- 2007 Participated in Regional Workshop on **“Bio-medical and Municipal Solid Waste Management”** held on August 21-22, 2007 at Hotel Park View, Chandigarh organized by Toxics Link, New Delhi in partnership with Punjab State Council for Science & Technology (PSCST), Chandigarh.
- 2007 Organized in Regional Workshop on **“Ramsar Sites of Northern States Present Status and Future Potentials”** held on 11<sup>th</sup> to 13<sup>th</sup>, April, 2007 at Hotel Mount View, Chandigarh organized by Punjab State Council for Science & Technology (PSCST), Chandigarh.
- 2006 Participated in the National Seminar on **“New Trends in Life Sciences”** Organized by Deptt. of Zoology, Panjab University, Chandigarh from 11–12 December, 2006.
- 2006 Organized the **Training programme for District Science Supervisors and Master Trainers under National Green Corps programme** with the assistance from Ministry of Environment and Forests, Govt of India in the Punjab State Council for Science and Technology, Chandigarh on 31 October, 2006.
- 2006 Participated in the Seminar on **“Soil and Water Conservation”** organized by Deptt. of Soil Conservation, Govt. of Punjab on 06-10-2006.
- 2006 Organized **“Vatavaran Film Festival on Environment and Wildlife”** on 23-25, August, 2006 by Punjab State Council for Science and Technology, Chandigarh in collaboration with Centre for Media Studies, New Delhi.
- 2005 Participated in the **“National Seminar ‘New Trends in Fishery Development in India’** organized by Panjab University, Chandigarh February from 16-18, 2005.
- 2004 Participated in the **“91<sup>st</sup> Session of Indian Science Congress Association”** jointly organized by Panjab University and Institute of Microbial Technology, Chandigarh from 3–7 January, 2004.
- 2003 Participated in the workshop on **“Capacity Building Programme on wetlands Conservation”** organized with the assistance from UNDP–GEF Small Grant Programme in the Punjab State Council for Science and Technology, Chandigarh on 3–

- 12–2003.
- 2003 Participated in the “**XXVI Annual Conference on Electron Microscopy and Allied Fields**” organized by the Electron Microscopic Society of India and Center for Potato Research Institute, Shimla from 16<sup>th</sup> April to 18<sup>th</sup> April, 2003.
- 2001 Participated in the Workshop on the “**Wetlands of Haryana and Punjab**” organized by M.L.N. College, Yamunanagar, Haryana from 11–12 October, 2001.
- 2001 Attended the conference on “**Genomic-The Prospective Research Strategies**” by Association of Basic Medical Scientists P.G.I. Chandigarh in the memory of Vivek Chander Shakher Memorial Young Scientist Award 2001.
- 2001 Invited by the **Youth World Water Forum, The Netherlands** for poster presentation on 25<sup>th</sup> June - 29<sup>th</sup> June 2001.
- 2001 Presented a paper in “**XXIV Annual Conference on Electron Microscopy and Allied Fields**” organized by the Electron Microscopic Society of India and Panjab University at RSIC/CIL, Panjab University, Chandigarh from 9–11 April, 2001.
- 2000 Organized the “**First Indian Fisheries Science Congress**” conducted by Indian Society of Fisheries Professionals, Mumbai and Panjab University from 21–23 September, 2000.
- 1999 Attended the Third Punjab Science Congress and Symposium on “**100 years of Post Mendelian Genetics; Advent of Biotechnology**” organized by Panjab University from 10–12 December, 1999.
- 1998 Conducted the Indo-U.S. Workshop on “**Conservation and development of Natural Fishery Resources of Western Himalayas**” Organized by Fish & Fisheries Laboratory, Deptt. of Zoology, Panjab University from 7–8 December, 1998.
- 1997 Actively participated in the Indian Science Congress Association organized by Deptt. of Biotechnology, Panjab University on 11 December, 1997.
- 1996 Organized the “**All India Congress of Cytology & Genetics**” held at Deptt. of Zoology, Panjab University, Chandigarh from 22–25 November, 1996.
- 1995 Participated in “**3<sup>rd</sup> International Symposium on Genetics, Health and Disease**” organized by Guru Nanak Dev University, Amritsar, India from 1-4 December, 1995.
- 1994 Participated in the sixty fourth session of “**The National Academy of Sciences and Symposium on Industrial Biotechnology – Indian Scenario**” Organized by Panjab University and Institute of Microbial Technology Chandigarh from 29<sup>th</sup> September-1<sup>st</sup> October, 1994.

c. **Books**

i) **Original :**

S. No.	Status	Number
1.	Published	2

- |    |                                |   |
|----|--------------------------------|---|
| 2. | Edited the Punjabi Translation | 1 |
| 3. | Publishing Shortly             | 1 |

**ii) Edited : One**

**Workshop/Conferences Organized**

<b>Year</b>	<b>Workshop/Conferences Organised</b>
2024	Organized World Environment Day – 2024 on the theme “ <b>Land restoration, desertification and drought resilience</b> ” by Punjabi University Environment Society by organizing plantation drive in Homi Bhabha Hostel for Boys on 07-06-2024.
2024	Organized <b>7 Nukkad Nataks by Punjabi University Environment Society on the various environmental issues under mission LiFE</b> , Punjab State Council for Science and Technology, Chandigarh, three were performed in the villages of district Patiala and three in the villages of district Fatehgarh Sahib and one was performed in Punjabi University, Patiala Campus from 20 <sup>th</sup> March, 2024 to 23 <sup>rd</sup> March, 2024.
2024	Organized one day workshop on <b>Green Campus Initiatives under NAAC guidelines</b> for university and college teachers in collaboration with Punjab State Council for Science and Technology (PSCST), Chandigarh under State Climate Change Knowledge Centre (PSCCKC) on 19-03-24.
2022	Organized one day workshop to celebrate “ <b>World Ozone Day - 22</b> ” by Department of Zoology and Environmental Sciences, Punjabi University, Patiala on 14-10-2022 funded by Punjab State council for Science and Technology, Chandigarh.
2021	Organized Two days National Conference on the topic “ <b>Strategies and Solution to Achieve Clean Air - Punjab</b> ” by Punjabi University Environment Society in collaboration with Punjab Pollution Control Board (PPCB), Patiala on 24 <sup>th</sup> and 25 <sup>th</sup> December, 2021.
2021	Organized one day Webinar on the topic “ <b>Accelerating actions to combat climate change implications in Punjab</b> ” by Punjabi University Environment Society in collaboration with Punjab State Council for Science & Technology (PSCST), Chandigarh on 25 <sup>th</sup> September, 2021.
2019	Organized one day Workshop on the theme “ <b>Our Biodiversity, Our Food, Our Health</b> ” to celebrate “International Day for Biological Diversity - 2019” on 30-05-2019 funded by Punjab Biodiversity Board, Chandigarh.
2019	Organized one day Workshop on the theme “ <b>Awareness and capacity building about climate change on Biodiversity in Punjab</b> ” by Department of Zoology and Environmental Sciences, Punjabi University, Patiala on 15 <sup>th</sup> April, 2019

- funded by Punjab State Council for Science & Technology (PSCST), Chandigarh.
- 2018 Organized one day Workshop on the theme “**Climate Change Adaptation in Rural Areas of India (CCA RAI)**” of Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH, under which *Popular Lecture Series on Climate Change and Sustainable Development* have been conducted under the Indo-German bilateral project in collaboration with Centre for Environment Education, New Delhi, GIZ, Germany, Punjab State Council for Science & Technology (PSCST) and Department of Zoology and Environmental Sciences, Punjabi University, Patiala on 23<sup>rd</sup> October 2018.
- 2018 Organized one day Workshop on the theme “**Celebrating 25 Years of Action for Biodiversity**” to celebrate “International Day for Biological Diversity - 2018” on 29-05-2018 funded by Punjab Biodiversity Board, Chandigarh.
- 2018 Organized one day Conference and an environment awareness rally on the theme “**Beat Plastic Pollution**” funded by Punjab State Council for Science and Technology, Chandigarh on 07.06.2018.
- 2017 Department of Zoology & Environmental Sciences, Punjabi University, Patiala organized one day National workshop in University camps to celebrate “**International Day for Biological Diversity-17**” on the theme “**Biodiversity and Sustainable Tourism**” on 12-06-2017 under the funds provided by Punjab Biodiversity Board, Chandigarh
- 2017 Organized one day Workshop and plantation activities on the theme “**Combating Desertification, Land Degradation and Drought**” on 17-02-2017 under National Environmental Awareness Campaign (NEAC) – a programme of Ministry of Environment, Forests and Climate Change, Govt. of India in the Department of Zoology and Environmental Sciences, Punjabi University, Patiala.
- 2016 Organized one day Workshop on the theme “**Fish Watch Programme**” to celebrate World Wetland Day on 28.04.2016 at Katli Fish Farm, Ropar.
- 2015 Organized one day National Conference on the theme “**Biodiversity for Sustainable Development**” under Punjab Biodiversity Board, Chandigarh and National Biodiversity Authority, Govt. of India on 29.05.2015 in the Department of Zoology and Environmental Sciences, Punjabi University, Patiala.
- 2014 Organized one day workshop on the theme “**Combating Desertification Land Degradation and Drought**” under National Environment Awareness Campaign (NEAC) scheme of Ministry of Environment and Forests, Govt. of India on 14.11.2014 in the Department of Zoology and Environmental Sciences, Punjabi University, Patiala.
- 2014 Organized one day National Workshop on the theme “**Island Biodiversity**” under

- Punjab Biodiversity Board, Chandigarh and National Biodiversity Authority, Govt. of India on 27.05.2014 by the Department of Zoology and Environmental Sciences, Punjabi University, Patiala.
- 2013 Organized one day National Workshop on the theme "**Water and Biodiversity**" under Punjab Biodiversity Board, Chandigarh and National Biodiversity Authority, Govt. of India on 28.05.2013 in the Department of Zoology and Environmental Sciences, Punjabi University, Patiala.
- 2013 Organized one day camp at Ropar Wetland on 29.06.2013 and plantation drive on 27.03.2013 in the University campus under National Environment Awareness Campaign (NEAC) scheme of Ministry of Environment and Forests, Govt. of India by the Department of Zoology and Environmental Sciences, Punjabi University, Patiala.
- 2012 Organized one day National Workshop on the theme "**Marine Biodiversity**" under Punjab Biodiversity Board, Chandigarh and National Biodiversity Authority, Govt. of India on 05.06.2012 by the Department of Zoology and Environmental Sciences, Punjabi University, Patiala. .
- 2011 Organized one day workshop on the theme "**Biodiversity Conservation**" & Plantation under National Environment Awareness Campaign (NEAC) scheme of Ministry of Environment and Forests, Govt. of India on 25.03.2011 in the Department of Zoology and Environmental Sciences, Punjabi University, Patiala..

## 11. R & D Projects

- 2019 Project on "**National Nature Camping Program under Environment Education Awareness and Training scheme of Ministry of Environment, Forest and Climate Change, Govt. of India**" sanctioned by Punjab State Council for Science and Technology, Sector-26, Chandigarh for worth of Rs. 16,00,000/-.
- 2019 Project on "**Preparation of 1 District and 2 Block Level Peoples' Biodiversity Registers in District Patiala and Blocks Sirhind and Dhuri**" by Punjab Biodiversity Board, Sector-26, Chandigarh for worth of Rs. 3,65,000/-.
- 2013 Minor Research project "**Biodiversity Assessment on Keshopur Miani and Shalla Pattan Wetlands**" Sanctioned by Punjab State Council for Science and Technology, Punjab, Chandigarh for worth of Rs. 1,05,500/-
- 2011 Major Research project on "**Ecological Studies of Ranjit Sagar Wetland with special reference to fish communities Structure**" sanctioned by Ministry of Environment Forests, Govt. of India worth of Rs. 22.5 lacs.

- 2005-06** “**Conservation and Management of Wetlands of State Importance**” by Govt. of State of Punjab.
- 2002-04** “**Economic Valuation of Wetlands of Punjab State**” by MoEF, Govt. of India.
- 2001-02** “**Conservation of Biological Diversity of Harike Wetland (Ramsar site)**” by MoEF, Govt. of India.

## **12. Invited Talks/Articles :**

### **Year Invited Talks**

- 2024 Delivered invited talk on the topic “**Air Pollution, Causes and Control**” on 5<sup>th</sup> July, 2024 (03.30 PM to 05.00 AM) organized by Malavya Mission Teacher Training Centre (MMTTC), Punjabi University, Patiala.
- 2024 Delivered invited talk on the topic “**Water Resources and Sustainable Development**” on 1<sup>st</sup> July, 2024 (03.30 PM to 05.00 AM) organized by Malavya Mission Teacher Training Centre (MMTTC), Punjabi University, Patiala.
- 2024 Delivered invited talk on the topic “**Status of Biodiversity in Punjab, its threats and Conservation Measures**” on 4<sup>th</sup> June, 2024 organized by DAV College, Hoshiarpur to celebrate International Day for Biological Diversity-2024.
- 2024 Delivered invited talk on the topic “**Status of Biodiversity in Punjab, its threats and Conservation Measures**” on 22<sup>nd</sup> May, 2024 organized by PMN College, Rajpura to celebrate International Day for Biological Diversity-2024.
- 2024 Delivered talked on the occasion of International Forest Day - 2024 at Akashbani Patiala on 21-03-2024.
- 2024 Delivered invited talk on the topic “**Aquatic Wildlife its Threats and Conservation Measures in Punjab**” on 2<sup>nd</sup> March, 2024 organized by Department of Zoology, Govt. Mohindra College, Patiala to celebrate World Wildlife Day.
- 2024 Delivered invited talk on the topic “**Water Crisis and its Conservation in Punjab**” on 29<sup>th</sup> February, 2024 organized by DAV College, Bathinda.
- 2024 Delivered key note address on the topic “**Impact of Industrial Pollution on Aquatic Diversity in Punjab**” on 21<sup>st</sup> February, 2024 in Science Festival under Environment Education Pogram organized by Punjabi University, Patiala.
- 2024 Delivered invited talk on the topic “**Water Resources and Sustainable Development**” on 24<sup>th</sup> January, 2024 (02.30 PM to 04.00 PM) organized by Malavya Mission Teacher Training Centre (MMTTC), Punjabi University, Patiala.
- 2024 Delivered invited talk on the topic “**Impact of Industrial Pollution on Wetlands in Punjab**” on 22<sup>nd</sup> January, 2024 (02.30 PM to 04.00 PM) organized by Malavya Mission Teacher Training Centre (MMTTC), Punjabi University, Patiala.
- 2024 Delivered invited talk on “**IMPACT OF CLIMATE CHANGE ON BIODIVERSITY**” in a National Conference on the theme “Empowering Sustainability: Bridging Science,

- Technology and Climate Resilience” (ESBSTCR-2024)” sponsored by DST-SERB in collaboration with IIC and ICT Academy from 17<sup>th</sup> to 19<sup>th</sup> January, 2024 organized by Sant Baba Bhag Singh University, Jalandhar.
- 2023 Delivered invited talk on the topic “**Environment Crisis in Punjab**” on All India Radio Patiala on 3<sup>rd</sup> November, 2023 sponsored by Mission LiFE, Punjab State Council for Science and Technology (PSCST), Punjab.
- 2023 Delivered invited talk on the topic “**Biodiversity, its Threats and Conservation in Punjab**” on 3<sup>rd</sup> November, 2023 organized by Govt. Mohindra College, Patiala.
- 2023 Delivered invited talk on the topic “**Water Resources and Sustainable Development**” on 29<sup>th</sup> September, 2023 (10.00 AM to 11.30 AM) organized by Malavya Mission Teacher Training Centre (MMTTC), Punjabi University, Patiala.
- 2023 Delivered invited talk on the topic “**Air Pollution, Causes and Control**” on 26<sup>th</sup> September, 2023 (12.00 PM to 01.30 PM) organized by Malavya Mission Teacher Training Centre (MMTTC), Punjabi University, Patiala.
- 2023 Delivered invited talk on the topic “**Impact of Pollution on Wetlands of Punjab and their Conservation Measures**” on 23<sup>rd</sup> September, 2023 (02.30 PM to 04.00 PM) organized by Malavya Mission Teacher Training Centre (MMTTC), Punjabi University, Patiala.
- 2023 Delivered invited talk in a State Level Programme on “**World Ozone Day - 2023**” on 26<sup>th</sup> September, 2023 on the topic “**Preservation of Ozone Layer - 2023**” organized by Punjab Pollution Control Board, Patiala at Chandigarh University, Gharuan, SAS Nagar.
- 2023 Delivered invited talk in an International Conference “**Recent Advances in Chemistry - 2023**” on 23<sup>rd</sup> February, 2023 on the topic “**Status and Impact of Industrial Pollution on Wetlands in Punjab**” organized by Department of Chemistry, Punjabi University, Patiala.
- 2023 Delivered Lead Lecture during 26<sup>th</sup> Punjab Science Congress in a National Conference on Environment, Food Security and Health with Reference to Climate Change on 7<sup>th</sup> to 9<sup>th</sup> February 2023 on the topic “**Impact of Climate Change on Fish Diversity in Wetlands of Punjab**” organized by Department of Botany and Environmental Science, Sri Guru Granth Sahib World University, Fatehgarh
- 2022 Delivered invited talk in a Three days training workshop organized by Punjab Fisheries Development Board at Zila Prishad, Sirhind Road, Patiala in collaboration with Department of Fishery, Patiala, Govt. of Punjab on 21<sup>st</sup> November, 2022 on the topic “**COMMON FISH DISEASES AND THEIR CONTROL**” to commemorate World Fisheries Day.
- 2022 Delivered invited talk in a one day training workshop entitled “**PMMSY (CS)**” Outreach Programme – Azadi Ka Amrit Mahaotsav on 9<sup>th</sup> August, 2022 on the topic “**COMMON FISH DISEASES AND THEIR CONTROL**” organized by Department



- of Fishery, Govt. of Punjab at Patiala sponsored by National Fisheries Development Board, Hyderabad.
- 2022 Delivered invited talk on the occasion of **“World Nature Conservation Day-2022”** on 27<sup>th</sup> July, 2022 on the topic **“Aquatic Biodiversity of Punjab and Initiatives for Conservation”** organized by Punjab ENVIS Hub and Punjab State Climate Change Knowledge Centre, Punjab State Council for Science and Technology, Chandigarh.
- 2022 Delivered invited talk in a Workshop on **“Biodiversity Conservation: Building a Shared Future for All life”** on 23<sup>rd</sup> May, 2022 on the topic **“Biodiversity of Aquatic Ecosystems of Punjab, various threats and protection measures”** organized by Department of Botany and Environmental Science, Sri Guru Granth Sahib World University, Fatehgarh Sahib in collaboration with Punjab Biodiversity Board, Chandigarh.
- 2022 Delivered invited talk on the topic **“Water crisis in Punjab”** organized by Environment Sustainability and Management Cell, Sant Baba Bhag Singh University, Khiala, Adampur, Jalandhar on 13<sup>th</sup> May, 2022.
- 2022 Delivered invited talk on the topic **“Research Methodology: SEM and TEM”** organized by Environment Sustainability and Management Cell, Sant Baba Bhag Singh University, Khiala, Adampur, Jalandhar on 13<sup>th</sup> May, 2022.
- 2022 Delivered invited talk on the topic **“Water crisis in Punjab”** organized by Department of Zoology, Patel Memorial College, Rajpura on 25<sup>th</sup> March, 2022.
- 2021 Delivered invited talk in a Webinar on **“Impact of Pollution on Wetlands of Punjab”** on 31<sup>st</sup> March, 2021 organized by Department of Life Sciences and Allied Health Sciences, Sant Baba Bhag Singh University, Khiala, Adampur, Jalandhar
- 2021 Delivered invited talk in a Workshop on **“Fish and Avian Diversity: Identification and Conservation”** on 4<sup>th</sup> March, 2021 organized by Department of Zoology, Kurukshetra University, Kurukshetra in collaboration with Faculty Development Centre, K.U. Kurukshetra.
- 2020 Delivered invited talk on the topic **“Biodiversity of District Fatehgarh Sahib”** organized by Mata Gujri College, Fatehgarh Sahib on 5<sup>th</sup> October, 2020 on the occasion of celebration of Wildlife Week.
- 2020 Delivered invited talk in a Webinar on **“Impact of Environment Degradation on Biodiversity”** on 23<sup>rd</sup> June, 2020 by DAV College, Abohar.
- 2020 Delivered invited talk in a Webinar on **“Celebrating Biodiversity on World Environment Day”** held on 05-06-2020 by Desh Bhagat University, Mandi Gobindgarh.
- 2020 Delivered invited talk in a Webinar on the occasion of **World Environment Day – 2020** held on 05-06-2020 by Gulmohar Eco-Club, GPS, Machaki Mal Singh, District Faridkot in collaboration with PSCST, Chandigarh.

- 2019 Delivered talk on the topic “**Jeev-Jantuan te Pardushan da Asar**” at All India Radio, Jalandhar held on 20<sup>th</sup> December, 2019 at 12.15 PM.
- 2019 Delivered invited talk on the topic “**Status and Impact of Pollution on Wetlands in Punjab**” in a one day National Seminar on the topic “**Recent Advances in Life Sciences**” held on 29<sup>th</sup> March, 2019 organised by Kanya Maha Vidyalaya (KMV), Jalandhar.
- 2019 Delivered invited talk on the topic “**Status of Punjab Wetlands**” in a UGC sponsored National Seminar on the topic “**Role of Biological Sciences in Organic Farming**” held on 20<sup>th</sup> March, 2019 organised by DAV College, Abohar.
- 2019 Delivered invited talk on the topic “**Wetlands and Global Climate Change**” on the occasion of celebration of “**World Wetland Day-19**” held on 7<sup>th</sup> February, 2019 organised by I.K. Gujral Science City, Kapurthala.
- 2018 Delivered invited talk on the topic “**Fish Taxonomy Tools**” in a one day National Workshop on the topic “**Biosystematics and Taxonomy**” held on 29<sup>th</sup> October, 2018 organised by Mata Gujri College, Fatehgarh Sahib.
- 2018 Delivered invited talk on the topic “**IMPACT OF CLIMATE CHANGE ON FISHERIES SECTOR IN PUNJAB AND ENSUING VULNERABILITIES**” in a 4-day training Workshop on **Integrating Climate Change in Development Planning** dated 24<sup>th</sup> - 27<sup>th</sup> July, 2018 organised by Punjab State Council for Science and Technology, Chandigarh in collaboration with GIZ and IORA Ecological Solutions, New Delhi at Shivalik View Hotel, Chandigarh.
- 2017 Delivered invited talk on the topic “**Different Toxicological Techniques used to assess water Pollution**” in a 3-day residential training programme on **BIOLOGICAL MONITORING, ANALYSIS & TESTING (MICROBIOLOGY, BIO-ASSAY & BIOMONITORING), SOPs, DATA INTERPRETATION AND QUALITY ASSURANCE** dated 12<sup>th</sup> - 14<sup>th</sup> October 2017 organised by school of Public Health, PGIMER, Chandigarh in collaboration with Panjab University, Chandigarh.
- 2017 Delivered invited talk on the topic “**Impact of Industrial Pollution in Wetlands on Human Health**” in a two days International Conference on the Topic “**Sustainable Development – Challenges and Prospects**” organized by Desh Bhagat University, Amlah Road, Mandi Gobindgarh, Distt. Fatehgarh Sahib, Punjab from 6<sup>th</sup> to 7<sup>th</sup> October, 2017.
- 2017 Delivered invited talk on the topic “**Fish Biodiversity of Wetlands of Punjab**” in a three days Fish Farmers’ Training Programme at Fish Seed Farm, Kapurthala, Punjab organized by Deptt. of Fisheries, Govt. of Punjab from 27<sup>th</sup> to 29<sup>th</sup> September, 2017.
- 2017 Delivered invited talk on the topic “**Ecological Studies on Ranjit Sagar Wetland**” in a two days **North Regional Workshop on Conservation and Management of**

- Wetlands** at Hotel Shivalik View, Chandigarh organized by Punjab State Council for Science and Technology, Sector-26, Chandigarh from 12-13 May, 2017.
- 2017 Delivered invited talk on the topic “**Water Scenario of State of Punjab** at Chitkara University, Banur on 22<sup>nd</sup> March, 2017 on the occasion of World Water Day.
- 2017 Delivered invited talk on the topic “**Biodiversity Loss due to Pollution in Harike Wetland (Ramsar site), Punjab (India)**” in a two days National Conference entitled “**Man and Environment**” organized by Centre for Swatch Bharat Swasth Bharat, Punjabi University, Patiala from 10-11 March, 2017.
- 2017 Delivered invited talk on the topic “**Status of Wetlands in India**” and Conducted Practical Workshop on the topic “**Fish Taxonomy**” organized by Deptt. of Zoology, Kumari Vidyavati Anand DAV College for Women Railway Road, Karnal, Haryana on 07-02-2-17.
- 2016 Delivered invited talk in the two day National Conference entitled “**Evolving New Horizons of Zoological Sciences in Human Welfare**” organized by Deptt. of Zoology, Kurukshetra University, Kurukshetra from 23<sup>rd</sup> to 24<sup>th</sup> November, 2016.
- 2016 Chaired a Technical Session as Chairperson in a “**National Seminar on Emerging Trends Life Sciences**” on 22.03.2016 at JC DAV College, Dasuya, Punjab.
- 2016 Delivered invited talk on “**Wetland Pollution and Biodiversity**” in a “**National Seminar on Emerging Trends Life Sciences**” on 22.03.2016 at JC DAV College, Dasuya, Punjab.
- 2016 Delivered invited talk on “**Wetlands: Status and Challenges to Biodiversity**” in a “National Seminar on Emerging Trends in Biological & Agricultural Sciences” on 22.01.2016 at DAV College, Abohar, Punjab.
- 2015 Delivered invited talk on “**Fishermen Livelihood – Issues and Remedies**” in a Seminar on Fishermen Livelihood on 17.09.2015 at Khalsa College, Amritsar organized by Vigyan Parishad Panchnad, Amritsar, Punjab.
- 2015 Delivered Expert talk on “**Status of Fish and Bird Diversity in Punjab**” on 18.08.2015 organized by Punjab Biodiversity Board, Chandigarh at Bathinda.
- 2015 Delivered Guest lecture on “**Structural Alteration in fish scales and ovaries by Accumulation of Heavy metals pollutants from Harike Wetland (Ramsar site), India**” on 03.04.2015 organized by Department of Zoology Lovely Professional University, Phagwara.
- 2015 Delivered invited talk on “**Impact of toxicity poses a threat to aquatic biodiversity**” on 24.03.2015 at Baradari Gardens, Patiala organized by District Administration, Patiala and Punjab Biodiversity Board, Chandigarh to promote capacity Building Programme on Biodiversity issues and Biological Diversity Act, 2002.
- 2014 Delivered invited lecture on “**Impact of climate change on Biodiversity**” at

- Workshop under National Green Corps on 11.07.2014 organized by the office of District Education officer (Sr. Sec.) Fatehgarh Sahib.
- 2014 Delivered invited lecture on **“Fish diversity of Punjab wetland”** at Harike Wetland on 02.02.2014 organized by Punjab State Council for Technology, Chandigarh to celebrate World Wetland Day.
- 2013 Delivered invited lecture on **“Status of Wetlands Punjab”** organized by Punjab Technical University, Giani Zail Singh Campus (Punjab) to celebrate World Wetland Day on 05-02-2013.
- 2012 Delivered invited lecture on **“Wetlands and their Conservation Methods”** organized by World Wide Fund, India with collaboration of Department of Wildlife, Forest Division, Harike Wetland on capacity building programme on wetlands on 14-06-2012.
- 2011 Delivered invited talk on **“Status of Biodiversity in Punjab”** organised by Deptt of Zoology, S. Govt College of Science Education and Research, Jagraon on 01<sup>st</sup> November, 2011.
- 2011 Delivered a lecture in a workshop organized by Govt. Sr. Sec. School, Kauli, Distt. Patiala in connection with the National Environmental Awareness Campaign (NEAC) programme of Ministry of Environment and Forests, Govt. of India on 24.02.2011.
- 2011 Delivered a lecture in a workshop organized by Govt. Middle School, Shankarpur, Distt. Patiala in connection with the National Environmental Awareness Campaign (NEAC) programme of Ministry of Environment and Forests, Govt. of India on 24.02.2011.
- 2010 Invited for a talk on **“Status of Wetland Conservation and Management in Punjab”** organized by Deptt. of Zoology, S. Govt College of Science Education and Research, Jagraon on 12<sup>th</sup> November, 2010.
- 2010 Invited for an Extension Lecture on **“Wetland Conservation and Management”** organized by Deptt. of Zoology, J.C. DAV College, Dasuya, District: Hoshiarpur on 19<sup>th</sup> February, 2010.
- 2007 Delivered a lecture in a workshop organized by the DEO, Hoshiarpur at P.D. Arya Sr. Sec. School, Hoshiarpur in connection with the National Green Corps programme of Ministry of Environment and Forests, Govt. of India on 11.05.07.
- 2007 Delivered a lecture in a workshop organized by the DSS, Ludhiana at R. S. Model Sr. Sec. School, Shastri Nagar, Ludhiana in connection with the National Green Corps programme of Ministry of Environment and Forests, Govt. of India on 30.01.07.
- 2006 Delivered a lecture in a workshop organized by the DEO, Hoshiarpur at S.D. Sr. Sec. School, Hoshiarpur in connection with the National Green Corps programme of Ministry of Environment and Forests, Govt. of India on 29.11.06.

- 2006 Delivered a lecture in a workshop organized by the DEO, Nawanshahar at Govt. Sr. Sec. School, Nawanshahar in connection with the National Green Corps programme of Ministry of Environment and Forests, Govt. of India on 19.09.06.
- 2006 Delivered a lecture in a workshop organized by the DEO, Jalandhar at Fanton Gunj School in connection with the National Green Corps programme of Ministry of Environment and Forests, Govt. of India on 31.07.06.
- 2006 Delivered a lecture in a workshop organized by the DEO, Moga at Mission School, Moga in connection with the National Green Corps programme of Ministry of Environment and Forests, Govt. of India on 23.02.06.
- 2006 Delivered a lecture in a workshop organized by the DEO, Mukatsar at Guru Teg Bahadur Khalsa Sr. Sec. School, Malout in connection with the National Green Corps programme of Ministry of Environment and Forests, Govt. of India on 21.02.06.
- 2006 Delivered a lecture in a workshop organized by the DEO, Ropar at Khalsa Sen. Sec. School, Ropar in connection with the National Green Corps programme of Ministry of Environment and Forests, Govt. of India on 15.02.06.
- 2006 Delivered a lecture in a workshop organized by the DEO, Ropar at Khalsa Sen. Sec. School, Ropar in connection with the National Green Corps programme of Ministry of Environment and Forests, Govt. of India on 15.02.06.
- 2006 Delivered a lecture in a workshop organized by the DEO, Hoshiarpur at S.D. Sr. Sec. School, Hoshiarpur in connection with the National Green Corps programme of Ministry of Environment and Forests, Govt. of India on 30.01.06
- 2006 Delivered a lecture on Solid Waste Management in a two days workshop organized by the Deptt. of Entomology, Punjab Agricultural University, Ludhiana on 20.01.06
- 2005 Delivered a lecture in the refresher course for Forest Guards organized by Punjab State at Research & Training Circle, Hoshiarpur on 20.12.05

### 13. Ph.D. Students guided/under guidance (Details) :

#### Guided

S. No.	Name of the Student	Title of the Thesis	Year of Completion
1.	Reetu	COMPARISON OF ANTIBACTERIAL ACTIVITY OF SKIN MUCOSA OF <i>SPERATA SEENGHALA</i> (SYKES) AND <i>CATLA CATLA</i> (HAMILTON) IN RESPONSE TO POLLUTION IN THE RIVER SATLUJ, PUNJAB	2024
2.	Irshad Malik	ASSESSMENT OF PROTEIN CONTENTS, LIPIDS AND FATTY ACIDS IN PROCESSING WASTE OF WILD AND FARMED FISH, <i>HYPOPHthalmichthys molitrix</i> (VALENCIENNES)	2023
3.	Navpreet Kaur		2023

IMPACT OF INDUSTRIAL EFFLUENTS ON NUTRITIONAL QUALITY OF FISHES, <i>LABEO ROHITA</i> (HAMILTON) AND <i>SPERATA SEENGHALA</i> (SYKES) FROM NANGAL AND HARIKE WETLANDS			
4.	Dr. Saima Akhter	ECOLOGICAL STUDY OF THE ROPAR WETLAND WITH SPECIAL REFERENCE TO SURVEY AND DOCUMENTATION OF FISH DIVERSITY	2019
5.	Dr. Sunil Kumar	STUDY OF HYDROBIOLOGICAL PARAMETERS OF RANJIT SAGAR WETLAND WITH SPECIAL EMPHASIS ON FISH COMMUNITIES STRUCTURE	2018
6.	Dr. Rajwinder Kaur	AVIFAUNAL DIVERSITY OF NANGAL WETLAND WITH SPECIAL REFERENCE TO MIGRATORY BIRDS	2017
7.	Dr. Lakhwinder Kaur	COMPARATIVE STUDIES ON AGE AND GROWTH OF THE FISH <i>CATLA CATLA</i> (HAMILTON-BUCHANAN) FROM HARIKE WETLAND AND A PRIVATE FISH FARM	2016
8.	Dr. Manjit Kaur	TOXIC EFFECTS OF LEAD ON SOME SELECTED TISSUES OF THE FISH, <i>LABEO ROHITA</i> (HAMILTON-BUCHANAN)	2016
9.	Dr. Sulochana	EVALUATION OF TOXIC EFFECT OF POLLUTANTS ON REPRODUCTIVE EFFICACY OF <i>LABEO ROHITA</i> (HAMILTON-BUCHANAN) FROM HARIKE WETLAND	2016

### Under Guidance

S. No.	Name of the Student	Title of the Thesis	Year of Enrolment
1.	Jyoti		2023
2.	Anshu Lohan		2023
3.	Amarjit Kaur	A STUDY ON TRANSCRIPTOME PROFILING AND EVALUATION OF DIFFERENTIALLY EXPRESSED GENES RELATED TO THERMAL STRESS IN GOLDEN MAHSEER, <i>TOR PUTITORA</i> (HAMILTON)	2018
4.	Jagdeep Singh	COMPARATIVE ACCOUNT OF AVIAN DIVERSITY AND IMPACT OF HEAVY METALS ON SOME SELECTED AQUATIC SPECIES FROM HARIKE AND PONG WETLANDS	2018

### M.Phil./M.Tech Students guided :

S. No.	Name of the Student	Year of Registration	Year of Completion
1.	Ms. Shikha	2019	2022
2.	Ms. Ravneet Kaur	2016	2019
3.	Ms. Navpreet Kaur	2015	2017
4.	Mr. Irshad Malik	2013	2015
5.	Ms. Saima Akhter	2012	2014
6.	Ms. Sabiha Iqbal	2012	2013
7.	Ms. Salochana Jangu	2010	2012

**M. Sc. (Env.) Students guided :**

<b>S. No.</b>	<b>Name of the Student</b>	<b>Year of Registration</b>	<b>Year of Completion</b>
1.	Mr. Sukhjinder Sharma	2023	2024
2.	Mr. Sharanjit Singh	2023	2024
3.	Mr. Yadwinder Singh	2022	2023
4.	Mr. Harjinder Singh	2022	2023
5.	Mr. Lakhwinder Singh	2022	2023
6.	Ms. Yashvi Mutreja	2022	2023
7.	Ms. Arshdeep Kaur	2021	2022
8.	Ms. Neha Asija	2021	2022
9.	Mr. Jatinder Singh	2021	2022
10.	Mr. Karamveer Singh	2020	2021
11.	Ms. Navneet Kaur	2020	2020
12.	Ms. Sehnaz	2019	2019

**14. List of Papers/Courses taught at P.G. and U.G. Level**

<b>S. No.</b>	<b>Paper</b>	<b>Class</b>
1.	<b>Fish and Fisheries</b>	<b>M.Sc. II (Zoology)</b>
2.	<b>Wildlife and its Conservation</b>	<b>M.Sc. II (Zoology)</b>
3.	<b>Limnology</b>	<b>M.Sc. II (Zoology)</b>
4.	<b>Developmental Biology</b>	<b>M.Sc. I (Zoology)</b>
5.	<b>Biodiversity and Conservation Biology</b>	<b>M.Sc. II (Zoology)</b>
6.	<b>Environmental Impact Assessment, Legislations and Policy</b>	<b>M.Sc. II (Env. Sci.)</b>
7.	<b>Industrial Zoology</b>	<b>M.Sc. II (Zoology)</b>
8.	<b>Environmental Legislations and Policies</b>	<b>M.Sc. II (Env. Sci.)</b>
9.	<b>Environmental Physics and Climatology</b>	<b>M.Sc. I (Env. Sci.)</b>
10.	<b>Aquatic Environment</b>	<b>M.Sc. I (Env. Sci.)</b>
11.	<b>Wildlife Ecology</b>	<b>M.Sc. I (Env. Sci.)</b>
12.	<b>General Embryology</b>	<b>M.Sc. I (Zoology)</b>
13.	<b>Aquatic Biology</b>	<b>M.Sc. II (Zoology)</b>
14.	<b>General Ecology</b>	<b>M.Sc. I (Env. Sci.)</b>

## 15. Technical Proficiency and List of Papers Published :

- | S. No. | Expertise  |
|--------|--|
| 1.     | Fish Biologist (Age and Growth, Morphological parameters, Reproductive and Fish Habitat studies), Streams and River Ecology, Fish Toxicity.        |
| 2.     | Wetland Conservationist (Biodiversity, Survey and Mapping, Conservation and Management Practices, Pollution Monitoring, Economic Evaluation, etc.) |

### PROFESSIONAL TRAINING:

- 2018 Govt. of Punjab has nominated me to participate in a two days Indo-US workshop on the topic **"High Resolution Climate Projections & Analysis for India"** organized by Environment Protection Training and Research Institute (EPTRI), Hyderabad, Telangana from 12<sup>th</sup> to 13<sup>th</sup> February, 2018.
- 2016 Participated in a training programme organized by Peninsular & Marine Fish Generic Resources Centre, National Bureau of Fish Genetic Resources (NBFGR), CMFRI Campus Kochi, Kerala entitled **"An Introduction to Fish Taxonomy"** from 15<sup>th</sup> February to 20<sup>th</sup> February, 2016.
- 2013 Attended training programme organized by National Bureau of Animal Genetic Resources (NBAGR), Karnal entitled **"Computational Tools for Animal Genome Resource Data Analysis"** from December 2 - 13, 2013 under the NAIP funded project establishment of National Agricultural Bioinformatics Grid (NABG) in ICAR.
- 2011 Participated in a one day training workshop on **"Exploring New Vistas in Biodiversity and Research for Sustainable Development"** organized by Deptt. of Zoology, Panjab University, Chandigarh on 24<sup>th</sup> January, 2011.
- 2007 Participated in the training on **"Green Schools Programme"** organized by Punjab State Council for Science and Technology, Chandigarh in Collaboration with Centre for Science and Environment, New Delhi (CSE) from 10<sup>th</sup> July to 11<sup>th</sup> July, 2007 in the office of the Council.
- 2004 Participated in the **"Bird Banding Training"** organized by State Council for Science, Technology and Environment in Collaboration with Bombay natural History Society (BNHS) from 20<sup>th</sup> January to 9<sup>th</sup> February, 2004 at Pong Wetland (Ramsar site), Himachal Pradesh (India)
- 2002 Practiced **Artificial or Induced breeding technique** on an endangered fish, Golden Mahseer, *Tor putitora* (Ham.) at Fishery Farm, Gagaj, District, Bilaspur, Himachal Pradesh for six months in 2002.



- 2000 Participated in the workshop on **Microgel Electrophoresis under the supervision of Prof. N.P. Singh, inventor of Comet Assay** organized by Deptt. of Biotechnology, Panjab University from 16–17 August, 2000.
- 1995 Learned the technique in the workshop **on single cell Gel Electrophoresis (Comet) Assay in 3<sup>rd</sup> International Symposium on Genetics, Health and Disease** organized by Guru Nanak Dev University, Amritsar from 1-4 December, 1995.

## **A. RESEARCH PUBLICATIONS**

### **RESEARCH PUBLICATIONS / REPORTS / ABSTRACTS / BOOKS / BOOK REVIEW / PAMPHLETS:**

#### **PAMPHLETS (BIOLOGICAL AND ECOLOGICAL STUDIES ON WETLANDS)**

- 2006 **Brraich, O.S. and Ladhar, S.S. (2006) “Dholbaha Wetland”** Published by Punjab State Council for Science and Technology, Chandigarh.
- 2006 **Brraich, O.S. and Ladhar, S.S. (2006) “Mand Bharthala Wetland”** Published by Punjab State Council for Science and Technology, Chandigarh.
- 2006 **Brraich, O.S. and Ladhar, S.S. (2006) “Kahnuwan Wetland”** Published by Punjab State Council for Science and Technology, Chandigarh.
- 2006 **Brraich, O.S. and Ladhar, S.S. (2006) “Keshopur Miani Wetland”** Published by Punjab State Council for Science and Technology, Chandigarh.
- 2006 **Brraich, O.S. and Ladhar, S.S. (2006) “Jastarwal Wetland”** Published by Punjab State Council for Science and Technology, Chandigarh.

#### **BOOKS:**

- 2005 **Brraich, O.S. and Ladhar, S.S. (2005) “Fish biodiversity in the Wetlands of Punjab– A Field Guide”** Published by Punjab State Council for Science and Technology, Chandigarh.
- ISBN : 81- 88362-11-5**
- 2005 **Ladhar, S.S. and Brraich, O.S. (2005) “Biological diversity in wetlands of Punjab-A check list”**. Published by Punjab State Council for Science and Technology, Chandigarh.
- ISBN : 81-88362-12-3**

## BOOK EDITED:

- 2010 Edited The Punjabi Translation of “**The Green School’s Manual**” Published by Centre for Science and Environment (CSE), New Delhi.

## BOOK UNDER PUBLICATION:

- 2013 **Brraich, O.S. and Ladhar, S.S. “Birds of Harike Wetland – A Field Guide”** Publishing Punjab State Council for Science and Technology, Chandigarh.

## BOOK REVIEW:

- 2003 **Brraich, O.S. (2003).** Plants of Harike Wetland–A Field Guide. Published in The Tribune under the title “**Plants of Harike wetland can boost ecotourism**” on 30<sup>th</sup> November, 2003.

## RESEARCH PAPERS:

- 2023 **Brraich, O.S., Singh, J. and Singh, G. (2023).** Avifaunal Diversity around Urban and Rural Areas of District Patiala, Punjab, India. *Indian Journal of Ecology*, 50(5): 1536-1544.

DOI: <https://doi.org/10.55362/IJE/2023/4092>

ISSN 0304-5250. Published on 29<sup>th</sup> September, 2023

- 2023 **Brraich, O.S., Saini, S.K. and Singh, J. (2023).** Composition of avian communities in Ranjit Sagar Conservation Reserve, Punjab, India. *Journal of Threatened Taxa* 15(9): 23870–23878

DOI: <https://doi.org/10.11609/jott.8507.15.9.23870-23878>

ISSN 0974-7907 (Online) | ISSN 0974-7893 (Print) Published on 26<sup>th</sup> September, 2023

- 2023 **Kaur, N. and Brraich, O.S. (2023).** Detrimental influence of Industrial effluents, especially heavy metals, on limnological parameters of water and nutritional profile in addition to enzymatic activities of fish *Sperata seenghala* (Sykes, 1839) from diverse Ramsar sites, India (Punjab). *Environmental Monitoring and Assessment*, 195 (2012):1-60

DOI <https://doi.org/10.1007/s10661-023-11600-3>

**Impact Factor: 3.307**, Published on 1<sup>st</sup> August, 2023

ISBN: 01676369, 15732959.

- 2022 **Khanna, S., Singh, J. and Brraich, O.S. (2022).** Breeding Behavior and Nesting Ecology of Pheasant-tailed Jacana. *Indian Journal of Ecology*, 49(3): 970-972  
DOI: <https://doi.org/10.55362/IJE/2022/3623>  
ISSN 0304-5250. Published on 25<sup>th</sup> June, 2022
- 2022 **Brraich, O.S. & Singh, J. (2022).** AVIAN SPECIES COMPOSITION OF SHAH NEHAR BARRAGE LAKE DOWNSTREA M, PONG WETLAND, TALWARA (PUNJAB). *Journal of Experimental Zoology India*, 25 (1): 745-753.  
**DocID: <https://connectjournals.com/03895.2022.25.745>**  
**ISSN 0972-0030; eISSN 0976-1780. Published on 01-03-2022.**
- 2022 **Singh, J. & Brraich, O.S. (2022).** Seasonal composition of avian communities in different habitats of Harike Wetland, a Ramsar site in Punjab, India, *Journal of Threatened Taxa*, 14(2): 20550–20565.  
**ISSN 0974-7907 (Online); ISSN 0974-7893 (Print)**  
**<https://doi.org/10.11609/jott.7581.14.2.20550>, Published on 26-02-2022**
- 2022 **Brraich, O.S. & Kaur, L. (2022).** Comparative studies on age and growth patterns of cultivated and wild *Catla catla* (Hamilton). *Indian Journal of Experimental Biology*, 60: 144-149.  
**Impact Factor: 0.944**  
**ISSN:0975-1009 (Online); ISSN: 0019-5189 (Print), Published on 31<sup>st</sup> January, 2022**
- 2021 **Brraich, O.S. and Jassal, R. (2021).** Evaluation of Water Quality Pollution Indices for Heavy Metal Contamination Monitoring in Surface Water of Sutlej River (India). *Toxicology International*, 28(4): 327-335.  
**DOI: 10.18311/ti/2021/v28i4/27421**  
**ISSN (Print): 0971-6580 ISSN (Online) : 0976-5131**  
**Published on 27<sup>th</sup> December, 2021**  
**Impact Factor: 0.14**
- 2021 **Kaur, R. and Brraich, O.S. (2021).** Abundance and diversity of threatened birds in Nangal Wetland, Punjab. *Journal of Threatened Texa*, 13(12): 19733-19742.  
**ISSN: 0974-7907 (Online); ISSN: 0974-7893 (Print), Published on 26<sup>th</sup> October, 2021**
- 2021 **Brraich, O.S., Kaur, N. and Hundal, S.S. (2021).** A Study on Nutritional Profile of Liver from Captured and Cultured Rohu, *Labeo rohita* (Cypriniformes:

Cyprinidae). *Journal of Pharmaceutical Research International*, 33(44B): 398-408.

**ISSN: 2456-9119 Published on 25<sup>th</sup> September, 2021**

- 2021 **Kaur, N. and Braich, O.S. (2021).** Impact of industrial effluents on physico-chemical parameters of water and fatty acid profile of fish, *Labeo rohita* (Hamilton), collected from the Ramsar sites of Punjab, India. *Environmental Science and Pollution Research*, 28 (36): 1-19

**Impact Factor: 5.8 (2022)**

**Electronic ISSN: 1614-7499; Print: ISSN 0944-1344**

**Published on 18<sup>th</sup> September, 2021**

- 2021 **Braich, O.S. and Kaur, N. (2021).** AN INVESTIGATION ABOUT BIOCHEMICAL COMPONENTS OF MUSCLE AND SOME VISCERAL ORGANS IN *Labeo rohita* (Hamilton, 1822) CAUGHT FROM TWO DIFFERENT WETLANDS IN INDIA. *Uttar Pradesh Journal of Zoology*, 42(19): 82-91.

**ISSN: 0256-971X (P) Published on 16<sup>th</sup> September, 2021**

- 2021 **Kaur, M. and Braich, O.S. (2021).** Ultrastructural alterations in the Gills of cyprinid, *Labeo rohita* (Hamilton) exposed to Lead nitrate. *Indian Journal of Experimental Biology*, 59: 570-575.

**Impact Factor: 0.818**

**ISSN:0975-1009 (Online); ISSN: 0019-5189 (Print), Published on 27<sup>th</sup> August, 2021**

- 2021 **Braich, O.S. and Singh, J. (2021).** Status of Horned Grebe *Podiceps auratus* in India. *Indian BIRDS*. 17 (4): 121-122.

**ISSN / eISSN: 0973-1407 (SCI) Published on 10<sup>th</sup> August, 2021**

- 2021 **Braich, O.S. and Jassal, R. (2021).** Comparative analysis of physicochemical characteristics and heavy metals to assess the water pollution load of downstream junction of Buddha Nullah, the stretch of river Sutlej and Nangal wetland (Ramsar site) Punjab, India. *Journal of Experimental Zoology India*, 24 (2): 1205-1211.

**DocID: <https://connectjournals.com/03895.2021.24.1205>**

**ISSN (Print): 0972-0030 eISSN (Online): 0976-1780 Published on 24<sup>th</sup> July, 2021**

- 2021 **Braich, O.S., Kaur, N. and Akhter, S. (2021).** Assessment of Limnological Parameters and Water Quality Indices of Harike Wetland (Ramsar Site), Punjab (India). *Applied Ecology and Environmental Sciences*, 9 (6): 591-598.

DOI:10.12691/aees-9-6-3

**ISSN (Print): 2328-3912 ISSN(Online): 2328-3920 Published on 9th June,**

**2021**

2021 **Brraich, O.S. and Singh, J. (2021).** An Indian Scops Owl *Otus bakkamoena* breeding in an artificial wooden nest box. *Indian BIRDS*. 17 (2): 55-56.

**ISSN / eISSN: 0973-1407 (SCI) Published on 28<sup>th</sup> May, 2021**

2021 **Singh, J. and Brraich, O.S. (2021).** Photographic record of Horned Grebe from Harike Bird Sanctuary, Punjab, India. Bird-o-soar #88, In: *Zoo's Print*, 36(5): 51–52.

**ISSN (Print): 0971-6378; (Online): 0973-2543 Published on 21<sup>st</sup> May, 2021**

2021 **Brraich, O.S., Malik, I.A. and Akhter, S. (2021).** Seasonal and Habitat Effect on Total Lipid Content in Liver, Kidney and Intestine of Silver Carp (*Hypophthalmichthys molitrix*) Wild and Farmed. *Applied Ecology and Environmental Sciences*, 9 (4): 484-489.

DOI:10.12691/aees-9-1-19

**ISSN (Print): 2328-3912 ISSN (Online): 2328-3920 Published on 28<sup>th</sup> April, 2021**

2021 **Brraich, O.S. and Singh, J. (2021).** Avian fauna of village pond of Mote Majra, Punjab, India. Bird-o-soar #71, *Zoo's Print*, 36(2): 33–40.

**ISSN (Print): 0971-6378; (Online): 0973-2543 Published on 21<sup>st</sup> February, 2021**

2021 **Kaur, S., Brraich, O.S., Akhter, S. and Sidhu, H.K. (2021).** Bio-survey of Water Quality and Phytoplankton as Pollution Indicators of Ghaggar River, Punjab, India. *Applied Ecology and Environmental Sciences*, 9 (1): 119-122.

DOI:10.12691/aees-9-1-19

**ISSN (Print): 2328-3912 ISSN (Online): 2328-3920 Published in January, 2021**

2020 **Jangu, S., Kumar, D., Brraich, O.S. Baek, K.H. and Mishra, A.K. (2020).** Alterations in ultra-structures and elemental composition of ovaries of *Labeo rohita* (Hamilton-Buchanan) as a pollution indicator in Harike Wetland (Ramsar Site), India. *Journal of Histotechnology*, 43 (3): 1-8

<https://doi.org/10.1080/01478885.2020.1840115>

**Print ISSN: 0147-8885 Online ISSN: 2046-0236**

**Impact Factor: 1.918 (2021) Published in November, 2020**

- 2020 **Akhter, S. and Brraich, O.S. (2020).** Physico-Chemical Analysis of Fresh Water of Ropar Wetland (Ramsar site), India. *Current World Environment*, 15 (1): 117-126.  
**ISSN: 0973-4929 Published on 30-04-2020; Indexed in Clarivate Analysis (Web of Science)**
- 2020 **Akhter, S. and Brraich, O.S. (2020).** Statistical Analysis of Water Indices from Ramsar Site-Ropar Wetland, India. *Advances in Zoology and Botany*, 8 (3): 132-143.  
DOI:10.13189/azb.2020.080308  
**ISSN:2331-5083 (Print), ISSN:2331-5091 (Online) Published on 01-04-2020**
- 2020 **Akhter, S. and Brraich, O.S. (2020).** Spatial and Temporal Distribution of Phytoplankton from Ropar Wetland (Ramsar Site) Punjab, India. *Applied Ecology and Environmental Sciences*, 8 (1): 25-33.  
DOI:10.12691/aees-8-1-4  
**ISSN (Print): 2328-3912 ISSN (Online): 2328-3920. Published on February, 2020**
- 2019 **Brraich, O.S. and Saini, S.K. (2019).** Ichthyofaunal Diversity of Ranjit Sagar Wetland situated in the Northwestern Himalayas. *European Journal of Environmental Sciences*, 9(2):106-113.  
DOI: <https://doi.org/10.14712/23361964.2019.14>  
**ISSN 1805-0174 (Print) ISSN 2336-1964 (Online) Published on 28-12-2019**  
The journal is indexed in **Web of Science** and in **Scopus**.
- 2019 **Brraich, O.S. and Akhter, S. (2019).** Temporal Distribution of Macroinvertebrates and their Co-relationship with Physico-chemical parameters from Ropar Wetland. *Indian Journal of Environmental Protection*, 39 (9): 844-851.  
**Impact factor: 0.20 (2022); ISSN: 0253 – 7141 Published in September, 2019 UGC List No. 20768.**
- 2019 **Brraich, O.S. and Akhter, S. (2019).** Diversity and Distribution of Zooplankton in Ropar Wetland (Ramsar Site) Punjab, India. *Nature Environment and Pollution Technology*, 18 (2): 451-458.  
**ISSN: 09726268(Print); ISSN: 2395.3454 (online) Published in June 2019**
- 2019 **Brraich, O.S. and Kaur, L. (2019).** Comparative studies on age and growth determination by using vertebrae of *Catla catla* (Hamilton-Buchanan) from a private fish farm and Harike wetland (Ramsar site), India. *Trends in Fisheries Research*, 8(1): 65-71.  
**ISSN: 2319-474X (p); 2319-4758 (e)**  
**IMPACT FACTOR: = 0.231**

- 2018 **Braich, O.S. and Akhter, S. (2018).** Seasonal variation of benthic macro-invertebrate diversity of Ropar wetland (Ramsar site) Punjab, India. *J. Env. Bio-Sci.*, 32 (2): 217-226.  
**ISSN: 0973-6913 (PRINT); ISSN: 0976-3384 (e)**
- 2018 **Braich, O.S. and Akhter, S. (2018).** Correlation between abiotic and biotic components of Ropar wetland (Ramsar site) Punjab, India. *J. Env. Bio-Sci.*, 32 (2): 343-347.  
**ISSN: 0973-6913 (PRINT); ISSN: 0976-3384 (e)**
- 2018 **Jangu, S. & Braich, O.S. (2018).** Histopathological studies of Fish liver as biomarker of heavy metal pollution in Internationally important Harike wetland, India. *Current Topics in Toxicology*, 14: 67-72.
- 2017 **Braich, O.S. & Kaur, M. (2017).** Histopathological alterations in the Gills of *Labeo rohita* due to lead toxicity. *Indian Journal of Experimental Biology*, 55: 576-583.  
**Impact Factor: 1.165**
- 2017 **Braich, O.S. & Kaur, M. (2017).** Histopathological alterations in the kidneys of *Labeo rohita* due to lead toxicity. *Journal of Environmental Biology*, 38(2): 257-262.  
**Impact Factor: 0.640**
- 2017 **Braich, O.S. & Kaur, R. (2017).** Temporal composition and distribution of benthic macroinvertebrates in wetlands. *Current Science*, 112(1): 116-125.  
**Impact Factor: 0.967**
- 2016 **Braich, O.S. & Jangu, S. (2016).** Comparative account of accumulation of heavy metals and structural alterations in scales of five fish species from Harike Wetland, India. *Iranian Journal of Ichthyology*, 3(4): 275-282.
- 2016 **Braich, O.S. & Malik, I.A. (2016).** Fish Fauna of Wular Wetland (Ramsar Site in Kashmir Himalayas, India). *Iranian Journal of Ichthyology*, 3(3): 218-221.
- 2016 **Braich, O.S. & Kaur, R. (2016).** Avifaunal diversity of Nangal wetland, Punjab (India). *International Journal of Advanced Life Sciences*, 9(1): 77-88.
- 2015 **Braich, O.S. & Jangu, S. (2015).** Assessment of the water quality index on the basis of physicochemical parameters from Harike wetland (Ramsar site), India. *Ecology Environment and Conservation*, 21(4): 2047-2054.
- 2015 **Braich, O.S. & Kaur, M. (2015).** Ultrastructural changes in the gills of a cyprinid fish, *Labeo rohita* (Hamilton, 1822) through scanning electron microscopy after exposure to lead nitrate (Teleostei: Cyprinidae). *Iranian Journal of Ichthyology*, 2(4): 270-279.
- 2015 **Braich, O.S. & Saini, S.K. (2015).** Water Quality Index Of Ranjit Sagar Wetland Situated On The Ravi River Of Indus River System. *International Journal of Advance Research*, 3(12): 1498-1509.

- 2015 **Brraich, O.S. & Kaur, R. (2015).** Zooplankton community structure and species diversity of Nangal Wetland (Punjab), India. *International Journal of Advance Life Sciences*, 8(3): 307-316.
- 2015 **Brraich, O.S. & Kaur, M. (2015).** Determination of LC<sub>50</sub> of Lead Nitrate for a fish, *Labeo rohita* (Hamilton-Buchanan). *International Research Journal of Biological Sciences*, 4(8): 23-26.
- 2015 **Brraich, O.S. & Kaur, M. (2015).** Behavioural and Morphological manifestation in *Labeo rohita* (Hamilton-Buchanan) under the exposure of Lead Nitrate. *International of Journal Scientific Research*, 4(8): 52-54.
- 2015 **Brraich, O.S. & Kaur, R. (2015).** Assessment of Physico-Chemical Parameters and Water Quality Index of Nangal Wetland, Punjab (India). *Journal of Environment and Bio-Sciences*, 29(1): 33-39.
- 2015 **Brraich, O.S. & Saini, S.K. (2015).** Study of Zooplankton Diversity of Ranjit Sagar Wetland, Punjab (India). *Journal of Environment and Bio-Sciences*, 29(1): 45-50.
- 2015 **Brraich, O.S. & Kaur, L. (2015).** Length-weight relationship of *Catla catla* (Hamilton-Buchanan) from Harike wetland (Ramsar Site), Punjab, India. *International Research Journal of Biological Sciences*, 4(6): 44-47.
- 2015 **Brraich, O.S. & Akhter, S. (2015).** Morphometric characters and meristic counts of a fish, *Crossocheilus latius latius* (Hamilton-Buchanan) from Ranjit Sagar Wetland, India. *International Journal of Fisheries and Aquatic Studies*, 2(5): 260-265.
- 2015 **Brraich, O.S. & Akhter, S. (2015).** Morphometric characters and meristic counts of a fish, *Garra gotyla* (Gray) from Ranjit Sagar Wetland, situated in the Himalayan foothills, India. *International Research journal of Biological Sciences*, 4(5): 66-72.
- 2015 **Brraich, O.S. & Saini, S.K. (2015).** Phytoplankton abundance and species diversity in Ranjit Sagar Wetland, Punjab, India. *Current World Environment*, 10(1): 215-221.
- 2015 **Brraich, O.S. & Kaur, R. (2015).** Phytoplankton community structure and species diversity of Nangal Wetland, Punjab, India. *International Research Journal of Biological Sciences*, 4(3): 76-83.
- 2015 **Brraich, O.S. & Jangu, S. (2015).** Some aspects of reproductive biology on effect of heavy metal pollution on the histopathological structure of gonads in *Labeo rohita* (Hamilton-Buchanan) from Harike wetland, India. *International Journal of Fisheries and Aquaculture*, 7(2): 9-14.
- 2015 **Brraich, O.S. & Jangu, S. (2015).** Evaluation of water quality pollution indices for heavy metal contamination monitoring in the water of Harike wetland



- (Ramsar Site), India. *International Journal of Scientific and Research Publication*, 5(2): 1-6.
- 2014 **Brraich, O.S. & Jangu, S. (2014)**. Structural alterations by accumulation of heavy metal pollutants in scales of different fish species from Harike wetland (Ramsar Site), India. *Hydrology: Current Research*, 5(4): 116.
- 2014 **Brraich, O.S. & Saini, R.K. (2014)**. Water quality assessment of Nangal wetland (National wetland) Punjab, India. *Hydrology: Current Research*, 5(4): 109.
- 2014 **Brraich, O.S. & Kaur, M. (2014)**. Lead induced histopathological alterations in the gills of *Labeo rohita* (Hamilton-Buchanan). *Hydrology: Current Research*, 5(4): 129.
- 2014 **Brraich, O.S. & Saini, S.K. (2014)**. Water quality assessment of Ranjit Sagar wetland (National wetland), Punjab, India. *Hydrology: Current Research*, 5(4): 117.
- 2014 **Jangu, S. & Brraich, O.S. (2014)**. Evaluation of toxic effects of pollutants on scales of Fish, *Catla catla* (Hamilton-Buchanan) from Harike wetland. *Global Journal for Research Analysis*, 3(4): 195-197.
- 2014 **Jangu, S. & Brraich, O.S. (2014)**. Bioaccumulation of heavy metal pollutants in the scales of a freshwater fish, *Catla catla* from Harike wetland, India. *International Journal of Scientific Research*, 3(3): 392-93.
- 2014 **Jangu, S. & Brraich, O.S. (2014)** Heavy metals accumulation and structural alterations in scales of fish, *Labeo calbasu* (Hamilton-Buchanan) from Harike wetland (Ramsar Site), India. *International Journal of Scientific and Engineering Research*, 5(6): 637- 42.
- 2013 **Brraich, O.S. & Jangu, S. (2013)** Lepidological and Toxicological studies on the scale of a commercially important fish, *Cirrhinus mrigala* (Hamilton-Buchanan) upon exposure to pollutants in Harike wetland. *Trends in Fisheries Research*, 2(2): 23-29.  
P-ISSN: 2319-474X E-ISSN: 2319-4758
- 2013 **Brraich, O.S. & Jandu, S. (2013)** Fish Scales as pollution indicator in Harike Wetland. *International Journal of Fisheries and Aquaculture Sciences*, 3(2):173-182.  
ISSN: 2248-9975
- 2012 **Brraich, O.S. & Jandu, S. (2012)** Scale of fish *Cyprinus carpio* (Linnaeus) as heavy metal pollution indicator in Harike Wetland (Ramsar site). *Trends in Fisheries Research*, 1(3):5-8.  
P-ISSN: 2319-474X E-ISSN: 2319-4758
- 2012 **Johal, M.S & Brraich, O.S. (2012)** Food & Feeding habit of Golden Mahseer, *Tor putitora* (Ham.) inhabiting the stream feeling pong Wetland (Ramsar Site),

- Himachal Pradesh, India. *In: Proceedings of National Symposium on on "Frontiers of Wetland, Fishery Science & Aquaculture Research in the New Millennium (Wetland-2012)" organised by Department of Life Science & Bioinformatics, Assam University, Silchar on 21<sup>st</sup> to 22<sup>nd</sup> November, 2012.*
- 2011 **Braich, O.S., Ladhar, S.S. and Singh, N. (2011)** Sighting of Sarus Crane (*Grus antigone antigone*) spotted in Punjab. *Annals of Forestry*, 19(2):292-294.  
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