

Samira Agnihotri

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Education and Work experience

Senior Editorial Assistant at the Office of Communications, Indian Institute of Science, Bengaluru	March 2020 onwards
Research Associate on the action-research project "Natural Resource Depletion and Climate Change in Chamarajnar District", with the NGO Punarchith, Chamarajnar.	2019
Post- doctoral fellow at the Animal Behaviour and Cognition Programme, National Institute of Advanced Studies, Bengaluru, India	2016-2018
Senior Research Fellow with the Invasive Species Group at the India Biodiversity Portal and the Ashoka Trust for Research in Ecology and the Environment, Bengaluru	April - December 2015
Ph.D. from the Centre for Ecological Sciences, Indian Institute of Science, Bengaluru in Dr Rohini Balakrishnan's lab; thesis, titled "The structure and function of the vocal repertoire of the Greater Racket-tailed Drongo, <i>Dicrurus paradiseus</i> , in south India."	2007-2015
M.Sc. in Wildlife Biology & Conservation, National Centre for Biological Sciences and the Wildlife Conservation Society-India Programme, Bengaluru, India	2004-2006
B.Sc. Zoology, Maharaja Sayajirao University, Vadodara, India	2001-2004

Research interests

I. Vocal communication in birds and bioacoustics

One of my major research interests is in the ecology and evolution of diverse bird behaviours, specifically in the domain of avian vocal communication. In spite of being a

highly biodiverse tropical country, and birdwatching being a common hobby, we know very little about the basic ecology of our avifauna. My doctoral and post-doctoral research were the first studies in India to focus on the Greater-racket tailed drongo (*Dicrurus paradiseus*), and have revealed new insights into the behavioural ecology and breeding biology of this bird species. So far, it has been the only long-term behavioural study on birds in India. Studies on bird behaviour and song also contribute to our understanding of avian cognition and evolution, as well as to the origins of language itself.

Linked to my research interests in bird song, are my interests in bioacoustics. Bioacoustics, or the study of sounds produced by biological organisms, has tremendous application potential in signal processing, biodiversity monitoring, citizen science, conservation biology, and even human health.

II. Linguistics and Traditional Ecological Knowledge (TEK) and biocultural diversity

Since 2009, I have worked in collaboration with Dr Aung Si, a linguist, towards the documentation and preservation of the endangered language and traditional ecological knowledge of the Solega people of the Biligiri Rangan Hills. This research also draws upon the concept of resilient social-ecological systems that have co-evolved in adaptive ways, also known as biocultural diversity.

III. Climate change, sustainability, and local ecologies

The vulnerability of tropical bird species to climate change is often overlooked, mainly due to the dearth of information on the basic ecology of these species. Long term and local monitoring programs for collecting such data are essential to our ability to conserve these tropical birds. I plan to establish a novel long term research project that examines climate change effects on the reproductive phenology of a bird species in the Asian tropics.

As a member of [Punarchith](#), I am part of an action research project on climate change in Chamarajanagar district. This research is focussed on the collection and dissemination of long-term climate change data to various audiences. I am also interested in the documentation and preservation of traditional agro-ecological practices, especially with Solega women.

IV. Alternative pedagogies

I believe that one of the main goals of teaching is to inculcate critical thinking, which is best achieved through hands-on, project-based learning with interdisciplinary perspectives.

At Punarchith, I have been involved in curriculum development and field training for their Integrated Learning Programme (ILP) for rural youth, and in conducting modules on local ecology.

Taking my research on TEK forward, and in collaboration with the Solega community, I am preparing curricula for a “forest school”, with the goal of revitalizing their language and TEK among their children and young people.

V. Outreach and science communication

I strongly believe as teachers and practitioners of science, we should constantly find ways to engage with society, whether it is through outreach, applications or interdisciplinary

collaborations. All my research projects involve an outreach component, and have resulted in several popular science articles. I continue to work towards these goals through my association with Punarchith, as well as my current work in science communication at the Indian Institute of Science.

Grants

I. National:

- 2017 **Indian National Trust for Art and Cultural Heritage (INTACH) Research Scholarship**, with Dr Srikumar Menon, National Institute of Advanced Studies, for the project titled “Dwarves and Dolmens: Tracking the “Little People” Legends of Megalithic South India”
- 2016 **National Post-Doctoral Fellowship (N-PDF)** by the Science and Engineering Research Board, Department of Science and Technology, Government of India
- 2013 **Indian Institute of Science - GARP travel fund** for attending the International Bioacoustics Congress (IBAC), Pirenopolis, Brazil.
- 2007 **Dorabji Tata Trust Small Grants**, Ashoka Trust for Research in Ecology & the Environment (ATREE)

II. International:

- 2013 Jacques Vielliard Travel Grants for the **International Bioacoustics Congress, Pirenopolis, Brazil.**
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Teaching

Designed and co-conducted a certificate course on Ecological Methods at the Department of Environment Science, St. Joseph’s Autonomous College, Bengaluru (40 hours)	July - September 2016
Guest lecturer for BIO 325 (Animal Behaviour) at the Indian Institute of Science Education and Research (IISER) – Pune (2 hours)	February 2018

Guest lecturer for BIO 414 (Bioacoustics) at the Indian Institute of Science Education and Research (IISER) – Tirupati (13 hours)	August - October 2018
Designed and conducted a skill development course in Behavioural ecology for B.Sc. Environment Science at St. Joseph's Autonomous College, Bengaluru (21 hours)	November 2019
Co-designed and co-conducted an affirmative action pre-conference module (5 days) for under-represented groups at the Students' Conference on Conservation Science (SCCS-Bengaluru)	2018, 2019
Co-taught Behavioural Ecology for the M.Sc. Wildlife Biology & Conservation programme at the National Centre for Biological Sciences, Bengaluru (15 hours)	April - May 2021

Journal Publications

- **Agnihotri, S.**, & Si, A. (2012). Solega ethno-ornithology. *Journal of Ethnobiology*, 32(2), 185–211.
- **Agnihotri, S.**, Sundeep, P., Seelamantula, C. S., & Balakrishnan, R. (2014). Quantifying vocal mimicry in the greater racket-tailed drongo: a comparison of automated methods and human assessment. *PloS One*, 9(3), e89540.
- Si, A., & **Agnihotri, S.** (2014). Solega Place Names and Their Ecological Significance. *Anthropological Linguistics*, 56(3/4), 389–414.
- Buxton, R. T., **Agnihotri, S.**, Robin, V. V., Goel, A., & Balakrishnan, R. (2018). Acoustic indices as rapid indicators of avian diversity in different land-use types in an Indian biodiversity hotspot. *Journal of Ecoacoustics*, 2.
- Menon, S. & **Agnihotri, S.** (2020). Of dwarves and dolmens: Tracking the “little people” legends of megalithic south India. *Journal of Heritage Studies*, IV (89).
- **Agnihotri, S.**, Kethgowda M., & Jadeswamy (2020). Do racket-tailed drongos make tree-guards for their nest trees? *Behaviour* <https://doi.org/10.1163/1568539X-bja10043>
- **Agnihotri, S.**, Madegowda, C., & Si, A. (2021). Tiger becomes termite hill: Soliga/Solega perceptions of wildlife interactions and ecological change. *Frontiers in Conservation Science*, 2 (24). <https://doi.org/10.3389/fcosc.2021.691900>

Conference presentation

- “Structure and function of vocal mimicry in the Greater racket-tailed drongo” at the XXIV International Bioacoustics Congress (IBAC), Pirenopolis, Brazil, 2013.
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Popular media

- What’s that racket? Of drongos and acoustic landscapes (2015) (<http://jlrexplore.com/explore/from-the-field/racket-tailed-drongo>)
 - “Enu sahebre!” (2017) <http://jlrexplore.com/explore/from-the-field/enu-sahebre>
 - A (re)discovery in the BR Hills (2018) <http://jlrexplore.com/explore/from-the-field/a-rediscovery-in-the-biligiri-rangan-hills>
 - The darkness of the evergreen forest (2019) <http://jlrexplore.com/explore/from-the-field/the-darkness-of-the-evergreen-forest>
 - Radio interview with Documenta 14 and Savvy Funk, Germany: https://www.mixcloud.com/Islands_Songs/ynk-6--june-22nd--field-study-1--listening-session-with-samira-agnihotri/
 - Radio show on bird calls and their functions with Air Bengaluru, All India Radio, 22nd March 2019
 - Radio interview for Resistance Radio. December 2020. https://www.youtube.com/watch?v=8arYWKx5_Vc
 - Corona halts a forest festival (2020) <http://www.ruralagrarianstudies.org/corona-halts-a-forest-festival-biligiri-rangan-hills-chamarajanagar-district/>
 - The plight of domestic workers during India’s lockdown (2020) <https://www.coronatimes.net/plight-domestic-workers-india-lockdown/>
 - <https://science.thewire.in/environment/call-to-decolonise-ecology-conservation-field-research/>
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Science Communication at IISc

- <https://connect.iisc.ac.in/2020/07/tracking-the-scourge-diagnostics-testing-and-vaccines-for-covid-19/>
- <https://connect.iisc.ac.in/2020/09/up-up-and-away/>

- <https://connect.iisc.ac.in/2021/03/partners-in-the-field/>
 - <https://kernel.iisc.ac.in/iisc-sets-up-test-centre-for-covid-19/>
 - <https://kernel.iisc.ac.in/mobile-labs-for-covid-19-testing/>
 - <https://kernel.iisc.ac.in/novel-method-for-live-imaging-of-influenza-infection/>
 - <https://kernel.iisc.ac.in/to-mate-or-be-eaten-tree-cricket-behaviour-in-the-presence-of-a-predator/>
 - <https://kernel.iisc.ac.in/speak-and-ye-shall-be-heard/>
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Talks and lectures

- Online lecture on “**How scientists study birdsong?**” for NPTEL (National Programme on Technology Enhanced Learning). February 2021
<https://www.youtube.com/watch?v=aWNWTCJmpgo>
 - Invited speaker at the **Karnataka Bird Festival**, BR Hills in January 2021
 - Invited speaker for the “**Science and Society**” webinar series by Paraspar, an initiative of the Office of Communications at the Indian Institute of Science. November 2020
<https://www.youtube.com/watch?v=InfxOp2y4GM>
 - Invited talk for the Bharat Gyan Vigyan Samithi, Karnataka (BGVS), “**ಬಿಳಿಗಿರಿ ರಂಗನ ಬೆಟ್ಟಕ್ಕೆ ನನ್ನ ಮರು ಪಯಣ**” September 2020.
<https://www.youtube.com/watch?v=hJxyccSRJPs>
 - Online talk on “**Understanding Birdsong**” for Early Bird, an initiative of the Nature Conservation Foundation. May 2020
<https://www.youtube.com/watch?v=0xk6EYEPtN4>
 - Invited speaker at the **Mysuru Bird Festival**, 2019
 - Dr Joseph George **Memorial Talk** at Bengaluru Bird Day 2019 (<https://birdday.in/>)
 - Invited speaker at the **NatureInFocus** Festival, Bengaluru, 2018
 - Invited speaker at the **Karnataka Bird Festival**, Hampi in 2017
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Other professional activities

- Member of the Organising Committee for the **Student's Conference in Conservation Science-Bengaluru (SCCS-Bng)** 2021
- Attended the **International Archives Week 2021** by the Milli Consortium: <https://www.milli.link/iaw2021/>
- Attended the **International Archives Week 2020** by the Milli Consortium: <https://www.milli.link/iaw2020/>
- Attended the Winter School in Oral History 2019 on "**Community, Environment and Oral History: Individual and Collective Memory**", offered by the Centre for Public History, Bengaluru
- Co-conducted a workshop on "**Bioacoustics and Conservation**" at the Student's Conference on Conservation Science (SCCS) - Bengaluru since 2018
- Co-conducted a workshop on "**The Study of Animal Behaviour and its Applications for Conservation**" at the SCCS – Bengaluru since 2016
- Recorded, produced and distributed a CD "**Birds of the BR Hills**" in English and Kannada that contained calls and pictures of a 108 species plus Solega tribal folklore about birds in 2010

Referees

Dr A R Vasavi Address : Punarchith, Nagavalli Village, B.R.Hills Road, Chamarajanagara, Karnataka, 571342 Telephone : 9448360215 Email: arvasavi@gmail.com	Dr Rohini Balakrishnan Address: Centre for Ecological Sciences, Indian Institute of Science, Bangalore -560 012 Telephone: 9449648527 Email: brohini@iisc.ac.in
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