

# KRISHNA ANUJAN, PhD

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## RESEARCH INTERESTS

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I work towards understanding and equitably disseminating knowledge about forest responses to global change. Currently, I work with the ForestGEO global network at the Smithsonian Institution towards understanding tropical tree growth under changing climate regimes using long-term field data. For my PhD, I investigated multiple drivers of biodiversity and the ecosystem functioning in tropical forest tree communities in the Andaman Islands, an archipelago of continental islands in the Bay of Bengal.

## AWARDS AND GRANTS

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Smithsonian Institution internal grant in Biology	2024
Smithsonian Institution Postdoctoral Fellowship	2023-25
Meridian Collaborative Grant, National Geographic Society	2021
John Jay Fellow and Graduate Student Mentor, Columbia University	2021-22
Outreach Grant, Society for Experimental Biology	2021
Research grant on urban ecosystems, Azim Premji Foundation, Bengaluru	2019
Early Career Grant, National Geographic Society	2018
Dean's Fellowship, Columbia University	2016-21
Dean's List, IISER Pune	2015
Junior Research Fellowship, Council of Scientific & Industrial Research (CSIR), India	2014
KVPY Fellowship, Department of Science and Technology, Government of India	2010

## CURRENT RESEARCH PROJECTS

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**Tropical tree vital rates to infer composition in a changing world** September 2023 - present

*Advisors: Kristina Anderson-Teixeira and Sean McMahon, Smithsonian Institution*

I study how the spatial and functional context of tropical tree species affects their growth and survival under changing rainfall. I plan to leverage inventory information on trees, along with their spatial context, and combine this with tree-ring-derived information from candidate species across functional types to arrive at drivers of annual variation in growth in mixed deciduous forests of Thailand.

**Soundscapes and stories: a biocultural approach to forest health in India** December 2022 - present

*Collaborators: Sarika Khanwilkar, Pooja Choksi and Vijay Ramesh*

Funded by a National Geographic Meridian Collaborative Grant, our team is assessing forest health indicators combining soundscape monitoring with qualitative interviews of forest-dependent communities. We are creating a locally replicable biocultural model of forest health in two human-dominated, biodiverse landscapes.

**Ecological and management factors that maintain tropical forest productivity** March 2019 - present

*Co-authors: Jazlynn Hall, Maria Uriarte, Ruth DeFries, Shahid Naeem*

Protected Areas are important to preserve tropical biodiversity but their effectiveness in maintaining tropical forest productivity is less known. I am analysing the interactions between ecological and management factors in determining temporal variation in productivity across protected areas in the Andaman Islands.

**INvenTree: a database for tree inventories from the Indian subcontinent** 2021 - present

*Collaborators: Neha Mohanbabu, Akshay Surendra, Abhishek Gopal, Mahesh Sankaran, Tiffany Knight*

South Asian forests are underrepresented in many "global" analyses, although they span large diversity of ecosystems. We are working towards a network compiling published tree inventory information, including publishing trends and synthesising basic ecological relationships.

## TEACHING

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- Introduction to Statistics for Ecology and Evolution, Columbia University
- Environmental Biology I & II, Columbia University
- Summer Ecosystem Experiences for Undergrads - Jordan, Earth Institute, Columbia University
- Columbia Journey Seminar I & II, Columbia Undergraduate Scholars Programme
- Module on Environmental Writing, Azim Premji University
- Co-founder, Curriculum developer, and Instructor for the [Local Voices in Conservation Programme](#) - a three-week conservation summer school in the Andaman & Nicobar Islands.

## OUTREACH WORKSHOPS AND ACTIVITIES

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<a href="#">Kanha ka gaana</a> - a celebration of Soundscapes and Stories in Central India	2024
Outreach project on <a href="#">visual abstracts from scientific papers</a> with <i>The Society For Experimental Biology</i>	2022
Contributed to setting up regular local-led tree phenology monitoring in A&N with <a href="#">SeasonWatch</a>	June 2021
“Careers in nature” webinar for high school students in Kochi and Bengaluru	Sep 2020
“ <a href="#">Trees and Ecology of the Andaman Islands</a> ” talk at the Cochin Natural History Society	Aug 2020
One-day workshop on “Dendrobands for tree measurement” for FD field staff, A&N Islands	Oct 2019
“Life on a Tree Bark” workshop at Govt. Higher Secondary School, Kadamtala , A&N Islands	Sep 2019
Designed and facilitated a four-day <a href="#">Birding Workshop</a> to train tour guides in A&N Islands	June 2016

## EDUCATION

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Columbia University in the City of New York, <i>PhD</i>	Feb 2023
Indian Institute of Science Education and Research (IISER), Pune, <i>Integrated BS-MS</i>	May 2015

## RELEVANT SKILLS

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| · Programming and statistics in R        | · LaTeX  |
| · ArcGIS, Google Earth Engine, R Spatial | · GitHub |

## ACADEMIC PUBLICATIONS

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**Anujan K** *et al.*, “Environmental correlates of tree reproductive phenology in a tropical state of India - insights from a citizen science project”, in review *bioRxiv* [doi:10.1101/2023.03.24.533907](https://doi.org/10.1101/2023.03.24.533907)

**Anujan K** *et al.*, “Biodiversity effects on seedling biomass growth are modulated by light environment across functional groups”, in review *bioRxiv* [doi:10.1101/2022.03.08.483461](https://doi.org/10.1101/2022.03.08.483461)

**Anujan K** *et al.*, 2024, “Beyond the metropolis: Street tree distribution and residents’ perceptions in small urban centres”, *Journal of Urban Ecology* [doi:10.1093/jue/juae004](https://doi.org/10.1093/jue/juae004)

**Anujan K**, Ratnam J and Sankaran M, 2022, “Chronic browsing by an introduced mammalian herbivore in a tropical island alters species composition and functional traits of forest understory plant communities”, *Biotropica* [doi:10.1111/btp.13149](https://doi.org/10.1111/btp.13149)

Mohanty N P, Isaac S and **Anujan K**, 2022, “Diet of the brackish frog *Fejervarya moodiei* (Anura: Dicroglossidae) on the Andaman Islands: Diet of the brackish frog *Fejervarya moodiei*”, *Herpetology Notes*

**Anujan K** *et al.*, 2021, “Trophic complexity alters the diversity-multifunctionality relationship in experimental grassland mesocosms”, *Ecology and Evolution* [doi:10.1002/ece3.7498](https://doi.org/10.1002/ece3.7498)

Heilpern, SA, **Anujan K**, and Osuri A., 2020, “Positive correlations in species functional contributions drive the response of multifunctionality to biodiversity loss”, *Proceedings of the Royal Society B: Biological Sciences* Vol 287:1924

Sridharan B, Mohanty N P, **Anujan K** and Nelaballi S, 2017, “Violet cuckoo *Chrysococcyx xanthorhynchus* in the Andaman Islands” in *Indian Birds*