

Chandrakant Singh

Doctoral candidate

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Research interest

As a doctoral student, I plan to contribute to the complex understanding of water-induced tipping points in tropical ecosystems, as well as understand the implications of simultaneous human pressure on the ecosystems.

Education

Stockholm University

Stockholm Resilience Centre

Doctor of Philosophy in 'Sustainability Science'

Thesis (tentative): "Rainforest resilience and influence of human social dynamics"

Nov., 2018 – pursuing

Stockholm, Sweden

Indian Institute of Technology (Indian School of Mines) - Dhanbad

Department of Environmental Science and Engineering

Master of Technology in 'Environmental Science and Engineering' (First Class with Distinction)

Thesis: "Estimation of biomass using remote sensing and GIS for tropical forest"

Graduated May, 2018

Jharkhand, India

Bharati Vidyapeeth Deemed University - Pune

Department of Civil Engineering

Bachelor of Technology in 'Civil Engineering' (First Class)

Thesis: "Study of Nano-Concrete"

Graduated July, 2015

Maharashtra, India

Awards, Fellowships & Scholarships

- > **Jan. 2022-Aug. 2022** : Selected under [Youth for Water and Climate Programme, funded by Erasmus+](#), which is an 8-month capacity-building program for young professionals in the water and climate sector. [Expenses related to the programme covered].
- > **June 2021-Aug. 2021** : [Young Scientists Summer Program \(YSSP\) fellowship](#) was awarded by Swedish Research Council for Sustainable Development ([FORMAS](#)) in the year 2021 to undertake a research project at International Institute for Applied Systems Analysis ([IIASA](#)), Austria. [Amount: SEK 55,000].
- > **Feb. 2020-Dec. 2020** : [Erasmus+ mobility fellowship](#) was awarded to support my research stay at Delft University of Technology ([TU Delft](#)), Netherlands [Amount: EUR 6,545].
- > **July 2016-May 2018** : [Ministry of Education \(MoE, India\) scholarship](#) was awarded based on nationwide Graduate Aptitude Test in Engineering (GATE) to pursue a master's programme in engineering. [Amount: Rs. 12,500/month].

Experience

Junior Research Fellow

Indian Institute of Technology - Bombay

July – Sept., 2018

Maharashtra, India

Part-time Graduate Teaching Assistant

Indian Institute of Technology (Indian School of Mines) - Dhanbad

July, 2016 – May, 2018

Jharkhand, India

Industrial Internship

Central Mine Planning and Design Institute - Ranchi

May – June, 2017

Jharkhand, India

Industrial Internship

Madhav Limay Consultancy - Pune

June – Aug., 2014

Maharashtra, India



Skills and Interests

Programming Languages Python (Moderate to professional working efficiency), Google Earth Engine (Moderate), R statistical software (Basic)

GIS Softwares ArcGIS, ERDAS Imagine, ENVI, QGIS (Moderate to professional working efficiency for all the mentioned GIS softwares)

Leadership Chair of doctoral council at Stockholm Resilience Centre for the year 2021; Ethics committee board member at Stockholm Resilience Centre for the year 2022

Volunteer Work Worked as a volunteer teaching faculty for Kartavya-NGO teaching underprivileged children (August 2016-October 2017); Worked with LEO Club with their cause and helped them raise funds for the needy (Old-age homes and orphanages; August 2011- May 2013)

Interests Photography, badminton and swimming



Miscellaneous

Teaching

- > Teaching assistant and co-presenter for 'Quantitative Methods for studying Social-Ecological Systems' course at Stockholm Resilience Centre (15-26 Nov. 2021).

Attended Summer Schools

- > 'Resilience foundations from theory to practice' short course organized by Resilience Alliance, Online (24-28 May 2021). [\[Link\]](#)
- > 'Land Use and Ecosystem Change' Summer School organised by Karlsruhe Institute of Technology (KIT) at Garmisch-Partenkirchen, Germany (20-27 August 2019). [\[Link\]](#)



Articles

- > Wang-Erlandsson, L., Tobian, A., van der Ent, R., Fetzer, I., te Wierik, S., Porkka, M., Staal, A., Jaramillo, F., Dahlmann, H., **Singh, C.**, {...} Rockström, J. Towards a green water planetary boundary. *Nature Reviews Earth and Environment*. (Accepted)
- > **Singh, C.**, Wang-Erlandsson, L., Fetzer, I., Rockström, J., & van der Ent, R. (2020). Rootzone storage capacity reveals drought coping strategies along rainforest-savanna transitions. *Environmental Research Letters*. [\[Link\]](#)
- > Kumar, A., Samadder, S. R., Kumar, N., & **Singh, C.** (2018). Estimation of the generation rate of different types of plastic wastes and possible revenue recovery from informal recycling. *Waste Management*. [\[Link\]](#)

Conferences

- > **Singh, C.**, Wang-Erlandsson, L., Fetzer, I. van der Ent, R. (2022). Transient ecohydrology of the rainforests under rapidly changing climate. *The XIth Scientific Assembly of the International Association of Hydrological Sciences (IAHS)*, May/June-2022, Montpellier, France.
- > **Singh, C.**, Wang-Erlandsson, L., Fetzer, I. van der Ent, R. (2022). Transient ecohydrology of the rainforests under rapidly changing climate. *Living Planet Symposium*, May-2022, Bonn, Germany.
- > **Singh, C.** Observing stability and instability of terrestrial tropical ecosystems. *Climate Research School – 05-Nov. 2021, Bolin Centre for Climate Research, Stockholm University, Sweden*.
- > **Singh, C.**, Wang-Erlandsson, L., Fetzer, I., Rockström, J., van der Ent, R. (2021). Dry periods influence the ecohydrology of the rainforest. *In AGU Fall Meeting – 13-17 Dec. 2021, New Orleans, USA*. [\[Link\]](#)
- > **Singh, C.**, Wang-Erlandsson, L., Fetzer, I., Rockström, J., van der Ent, R. (2021). Water stress and their implications on the ecohydrology of rainforests. *In EGU General Assembly Conference Abstracts – 19-30 Apr. 2021 (Online)*. [\[Link\]](#)
- > **Singh, C.** Rootzone storage capacity reveals drought coping strategies along rainforest-savanna transitions. *Climate Research School – 20-Oct. 2020, Bolin Centre for Climate Research, Stockholm University, Sweden*.
- > Wang-Erlandsson, L., van der Ent, R., Staal, A., Porkka, M., Tobian, A., te Wierik, S., Fetzer, I., **Singh, C.**, {...} Rockström, J. (2021). Towards a green water planetary boundary. *In EGU General Assembly Conference Abstracts – 19-30 Apr. 2021 (Online)*. [\[Link\]](#)
- > **Singh, C.**, van der Ent, R. J., Fetzer, I., & Wang-Erlandsson, L. (2020). Rootzone storage potential indicates the extent of rainforest resilience. *In EGU General Assembly Conference Abstracts – 4-8 May 2020 (Online)*. [\[Link\]](#)
- > **Singh, C.**, Fetzer, I., Wang-Erlandsson, L., & van der Ent, R. J. (2019). Assessing water stress dynamics of the Amazonian rainforest through rootzone storage capacity: A time-series approach. *In EGU General Assembly Conference Abstracts – 7-12 Apr. 2019, Vienna, Austria*. [\[Link\]](#)

Reports

- > **Singh, C.** (2021). Self-influencing feedback of deforestation on the actors responsible. IIASA YSSP Report. Laxenburg, Austria: IIASA. [\[Link\]](#)

Under Review

- > **Singh, C.**, van der Ent, R., Wang-Erlandsson, L. & Fetzer, I. Hydroclimatic adaptation critical to the stability of tropical ecosystems.
- > **Singh, C.**, Karan, S. K. & Samadder, S. R. Remote sensing-based biomass estimation of dry deciduous tropical forest using machine learning and ensemble analysis.