Brief Profile

Name: Dr. Raj Kumar Bhattacharya

Designation: Assistant Professor

Department: Geography

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Highest Qualification: PhD (16.08.2018, Vidyasagar University)

Teaching Experience: 20.10.2009-09.02.2024 (Sukumar Sengupta Mahavidyalaya, Vidyasagar University), 10.02.2024-On present (Victoria Institution (College), University of Calcutta)

Subjects Taught: Geomorphology, Hydrology, Soil Geography, Environmental Geography, Cartography, Remote Sensing & GIS

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Research Experience: More than 13 years experience has been involved in the field of river sand mining, stream hydraulics, channel morphology, sediment dynamics, riverine ecology and basin hydrology in tropical alluvial rivers particularly Kangsabati River.

Research Interest: Fluvial Geomorphology, Hydroecology, Sedimentlogy, Environmental aspects of resource and hazard related Issues

List of Selected Publications:

1. **Book:** *River Sand Mining Modelling and Sustainable Practice-The Kangsabati River, India*
   DOI: https://doi.org/10.1007/978-3-030-72296-8
   ISBN: 978-3-030-72296-8
   Series: Environmental Science and Engineering

Publishing agreements with Springer Nature Switzerland AG, Switzerland

2. **List of Journal Publications:**

Title of paper	**Name of the Journal**	**Authors**	**Volume, page and year of Publication**	**DOI**	**Remarks**
Modelling of soil erosion susceptibility incorporating sediment connectivity and export at landscape scale using integrated machine learning, InVEST-SDR and Fragstats	J. Env. Management, Elsevier	Bhattacharya RK, Chatterjee ND, Das K	VOL 353 Page 120164 Year 2024	https://doi.org/10.1016/j.jenvman.2024.120164	Impact Factor (IF) 8.7
Application of land-use regression model with regularization algorithm to assess PM2.5 and PM10 concentration and health risk in Kolkata Metropolitan	Urban Climate, Elsevier	Das K, Chatterjee ND, Jana D, Bhattacharya RK,	VOL 49 Page 101473 Year 2023	https://doi.org/10.1016/j.uclim.2023.101473	IF: 6.4
Channel instability and hydrogeomorphic adjustment in alluvial reach of Kangsabati River, India using Digital Shoreline Analysis System and Acoustic Doppler Current Profiler	Geocarto International, Taylor & Francis	Bhattacharya RK, Chatterjee ND, Das K	VOL 37 NO 27 Page 16232-16260 Year 2022	https://doi.org/10.1080/10106049.2022.2107712	IF:3.8
Multifunctional resilience of river health to human service demand in an alluvial quarried reach: a comparison amongst fuzzy logic, entropy, and	Environmental Science and	Bhattacharya RK, Chatterjee ND, Das	VOL 29 Page 84137-84165	https://doi.org/10.1007/s11356-022-	IF:5.8

AHP based MCDM models	Pollution Research ,Springer	K	Year 2022	21040-0	
Morphometric analysis to characterize the soil erosion susceptibility in the western part of lower Gangetic River basin, India	Arabian Journal of Geoscie nces, Springer	Bhattacha rya RK, Chatterjee ND, Acharya P, Das K	VOL 14 Page 501 Year 2021	https://do i.org/10.1 007/s125 17-021- 06819-8	Cite Score 2.1
Land use and Land Cover change and its resultant erosion susceptible level: an appraisal using RUSLE and Logistic Regression in a tropical plateau basin of West Bengal, India	Environ, Dev Sustain. Springer	Bhattacha rya RK, Chatterjee ND, Das K	VOL 23 Page 1411-1446 Year 2021	https://do i.org/10.1 007/s106 68-020- 00628-x	IF:4.9
Impact of instream sand mining on habitat destruction or transformation using coupling models of HSI and MLR	Spat. Inf. Res., Springer	Bhattacha rya RK, Chatterjee ND, Das K	VOL 28 Page 67-85 Year 2020	https://do i.org/10.1 007/s413 24-019- 00271-3	IF:2.4
An integrated GIS approach to analyze the impact of land use change and land cover alteration on ground water potential level: A study in Kangsabati Basin, India	Ground w. Sustain. Dev, Elsevier	Bhattacha rya RK, Chatterjee ND, Das K	VOL 11 Page 100399 Year 2020	https://do i.org/10.1 016/j.gsd. 2020.100 399	IF:5.9
Sub-basin prioritization for assessment of soil erosion susceptibility in Kangsabati, a plateau basin: A comparison between MCDM and SWAT models	Sci. Total Environ, Elsevier	Bhattacha rya RK, Chatterjee ND, Das K	VOL 734 Page 139474 Year 2020	https://do i.org/10.1 016/j.scit otenv.202 0.139474	IF: 9.8
Effect of instream sand mining on	Environ	Bhattacha	VOL 78	https://do	IF:2.8

hydraulic variables of bedload transport and channel planform: an alluvial stream in South Bengal basin, India.	Earth Sci Springer	rya R, Dolui G, Chatterjee ND	Page 303 Year 2019	i.org/10.1007/s12665-019-8267-3	
Geomorphic response to riverine land cover dynamics in a quarried alluvial river Kangsabati, South Bengal, India	Environ Earth Sci Springer	Bhattacharya RK, Chatterjee ND, Das K	VOL 78 Page 633 Year 2019	https://doi.org/10.1007/s12665-019-8652-y	IF:2.8
Multi-criteria-based sub-basin prioritization and its risk assessment of erosion susceptibility in Kansai–Kumari catchment area, India.	Appl Water Sci., Springer	Bhattacharya RK, Chatterjee ND, Das K	VOL 9 Page 76 Year 2019	https://doi.org/10.1007/s13201-019-0954-4	IF:5.5
Consequences of sand mining on water quality and instream biota in alluvial stream: a case-specific study in South Bengal River, India.	Sustain. Water Resour. Manag., Springer	Bhattacharya RK, Chatterjee ND, Dolui G	VOL 5 Page 1815-1832 Year 2019	https://doi.org/10.1007/s40899-019-00345-y	IF:2.1
Grain size characterization of instream sand deposition in controlled environment in river Kangsabati, West Bengal.	Model. Earth Syst. Environ. Springer	Bhattacharya RK, Chatterjee ND, Dolui G	VOL 2 Page 118 Year 2016	https://doi.org/10.1007/s40808-016-0173-z	IF:3.0

3. **List of Book Chapters published with ISBN/ISSN numbers:**

Title of the Book and Book Series	**ISBN**	**Book Authored & published by**			
		Chapter Name	**Year of publication**	**Authors**	**DOI**
In *Gully*	978-3-	Chapter 10	2020	Bhattachar	https://doi.o

Erosion Studies from India and Surrounding Regions Advances in Science, Technology & Innovation (AS TI) Springer Nature Switzerland AG, Switzerland	030-23243-6	Estimation of Erosion Susceptibility and Sediment Yield in Ephemeral Channel Using RUSLE and SDR Model: Tropical Plateau Fringe Region, India.		ya RK, Chatterjee ND, Das K	rg/10.1007/978-3-030-23243-6_10 ISSN 2522-8714
River Sand Mining Modelling and Sustainable Practice-The Kangsabati River, India Environmental Science and Engineering Springer Nature Switzerland AG, Switzerland	978-3-030-72296-8	Chapter 1 River Sand Mining and its Management: A Global Challenge	2021	Bhattacharya RK, Chatterjee ND	https://doi.org/10.1007/978-3-030-72296-8_1
		Chapter 2 Geomorphic Threshold and Sand Mining: A Geo-environmental Study in Kangsabati River			https://doi.org/10.1007/978-3-030-72296-8_2
		Chapter 3 Fluvial Sediment Budget and Mining Impact Assessment: Use of RUSLE, SDR and Hydraulic Models			https://doi.org/10.1007/978-3-030-72296-8_3
		Chapter 4 Sediment Grain Size Analysis and Mining Intensity:			https://doi.org/10.1007/978-3-030-

		Estimation by GRADISTAT, G-STAT and LDF Techniques			72296-8_4
		Chapter 5 Mining Response on Alluvial Channel Flow and Sediment Transport: Application of Hydro-Morphological Techniques and Principal Component Analysis (PCA)			https://doi.org/10.1007/978-3-030-72296-8_5
		Chapter 6 Sand Mining Consequences on Channel Morphology: Practical Use of Digital Shoreline Analysis System (DSAS), Geometrical Indices and Compound Factor (CF)			https://doi.org/10.1007/978-3-030-72296-8_6
		Chapter 7 Sand Mining Consequences on Habitat Ecology, Water Quality and Species Diversity: Implementing of HSI, MLR, WQI and ANN Methods			https://doi.org/10.1007/978-3-030-72296-8_7
		Chapter 8 Sand Resource Estimation, Optimum Utilization and Proposed Sustainable Sand Mining: Recommending Sand Auditing, Optimization Model and EIA			https://doi.org/10.1007/978-3-030-72296-8_8

River Health and Ecology in South Asia Pollution, Restoration, and Conservation Earth and Environmental Science, Earth and Environmental Science Springer Nature Switzerland AG, Switzerland	978-3-030-83553-8	Chapter 11 Assessment of Habitat Quality in Quarried Reach of Alluvial River	2022	Bhattacharya RK, Chatterjee ND, Das K	https://doi.org/10.1007/978-3-030-83553-8_11
An Introduction to Morphology, Landscape and Modelling Geography of the Physical Environment (GEOPHY) Springer Nature Switzerland AG, Switzerland	978-3-030-79633-4	Chapter 22 Multi-criteria-based Morphometric Prioritization for Soil Erosion Susceptibility and Denudation Rate Assessment of Purulia District, India	2022	Dolui G, Das K, Chatterjee ND, Bhattacharya RK	https://doi.org/10.1007/978-3-030-79634-1_22
Case Studies in Geospatial Applications to	9780323999632	Chapter 4 Role of Groundwater potentiality and soil nutrient	2023	Parihari S, Chatterjee	https://doi.org/10.1016/B978-0-

Groundwater Resources, Elsevier		status on agricultural productivity: A case study in Paschim Medinipur District, West Bengal (pp: 39-66)		ND, Das K, Bhattacharya RK	323-99963-2.00008-0
Environmental Management and Sustainability in India Case Studies from West Bengal, Springer Nature Switzerland AG, Switzerland	978-3-031-31399-8	Chapter 17 Estimating the Variability of Ground-Level Annual PM2.5 and PM10 Using Land-Use Regression Model in Kolkata Municipal Corporation (KMC)	2023	Das K, Chatterjee ND, Bhattacharya RK,	https://doi.org/10.1007/978-3-031-31399-8_17