

CURRICULUM VITAE

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School of Environmental Sciences,
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Area of Specialization: Forest Ecology, Traditional ecological Knowledge, Tree water relations, Plant invasions, Ecosystem restoration

Professional Experience:

Research: 30 years
Teaching: 21 years

Membership of Professional Societies:

- International Society for Tropical Ecology, India (Fellow)
- Ecological Society of America, USA (Member)
- British Ecological Society (Member)
- National Institute of Ecology, India (Fellow)
- International Association for Ecology (INTECOL)(Member)

Administrative Experience:

- Hostel Warden: March 2013- April 2016
- Rector (Pro Vice Chancellor),
Jawaharlal Nehru University: April 2016- till present

Research and Development Projects:

1. “Promoting citizen science for creation of a phenology network to track climate change and plant invasions” funded by Department of Science and Technology, Government of India, 2019-2021. (14.124 Lakh).
1. “Network programme on convergence of traditional knowledge systems for integration to sustainable development in the Indian Himalayan region “funded by Department of Science and Technology, Government of India, 2015-2020. (1400.15 Lakh).

2. “Measurement of vegetation and biomass parameters under vegetation carbon pool assessment (VCP)” sub project of the ISRO-Geosphere Biosphere Program (IGBP) National Carbon Project (NCP) Phase II, 2015-19). (Total funding: Rs 2.0 Lakh).
3. “Scope of enhancing carbon sequestration by oak forests in central Himalaya” funded by Department of Science and Technology, Government of India, 2014-17. (Total funding: Rs. 34.76 Lakh).
4. “An ecological study of paradoxical establishment of white oak in the pine invaded habitats and change in ecosystem processes and services in oak-pine ecotone areas in central Himalaya” funded by University Grants Commission, 2013-16. (Total funding: Rs. 12.28 Lakh).
5. “Measurement of vegetation and biomass parameters under vegetation carbon pool assessment (VCP)” sub project of the ISRO-Geosphere Biosphere Program (IGBP) National Carbon Project (NCP), 2012-15). (Total funding: Rs 2.0 Lakh).
6. “Assessment of National Carbon Pool in India” sub project of the ISRO-Geosphere Biosphere Program (IGBP), National Carbon Project (NCP), Department of Space, Government of India, 2009-11. (Total funding: Rs. 2.43 lakh).
7. “Mapping and quantitative assessment of geographic distribution and population status of plant resources of Eastern Himalayan region” funded by Department of Biotechnology, Government of India, 2007-08. (Total funding: Rs. 13.23 lakh).
8. “Water relation and drought adaptation in *Shorea robusta*” funded by Department of Science & Technology, New Delhi, 1995-1998(Total funding: Rs 2.0 lakh).

Publications:

(a) *Publications in Journals:*

1. Shriya Garg, Rajendra Kr. Joshi & **S.C. Garkoti*** (2021). Effect of tree canopy on species composition, diversity and biomass of herbaceous vegetation and soil characteristics in semi-arid forests of the Aravalli hills. **Arid Land Research and Management**. 10.1080/15324982.2021.1953634. (Impact Factor: 1.148).
2. Mukesh Kumar, Shailendra Kumar, Abhishek Kumar Verma, Rajendra Kumar Joshi & **S.C. Garkoti*** (2021). Invasion of *Lantana camara* and *Ageratina adenophora* alters the soil characteristics and microbial biomass of chir pine forests in the central Himalaya, India. **Catena**. <https://doi.org/10.1016/j.catena.2021.105624>. (Impact Factor: 5.198).
3. Deepak Kumar Choudhary & **S.C. Garkoti*** (2021). Weakening Socio-Cultural Linkages Imperils the Sustainability of the Transhumant Pastoralism: A Case Study of *Kinnaura* Community of Western Himalaya, India. **International Journal of Ecology and Environmental Sciences**. 47(2): 91-100, 2021 ISSN: 2320-5199.

4. Peter Z. Fulé, **Satish C. Garkoti** & Rajeev L. Semwal (2021). Frequent burning in chir pine forests, Uttarakhand, India. **Fire Ecology**. <https://doi.org/10.1186/s42408-021-00106-3>. (Impact Factor: 1.667).
5. Mukesh Kumar & **S. C. Garkoti*** (2021). Functional traits, growth patterns and litter dynamics of invasive alien and co-occurring native shrub species of chir pine forest in the central Himalaya, India. **Plant Ecology**, <https://doi.org/10.1007/s11258-021-01140-6>. (Impact Factor: 1.829).
6. M. Krishna, J. Winternitz, **S. C. Garkoti*** & J. Penuelas (2021). Functional leaf traits indicate phylogenetic signals in forests across an elevational gradient in the central Himalaya. **Journal of Plant Research**, doi: 10.1007/s10265-021-01289-1. (Impact Factor: 2.185).
7. A. K. Verma, **S. C. Garkoti***, S. Singh, S. Kumar & M. Kumar (2021). Fine root production and nutrient dynamics in relation to stand characteristics of chir pine mixed banj oak forests in central Himalaya. **Flora**, <https://doi.org/10.1016/j.flora.2021.151808>. (Impact Factor: 2.088).
8. R. K. Joshi, **S. C. Garkoti*** (2021) Dynamics of ecosystem carbon stocks in a chronosequence of nitrogen-fixing Nepalese alder (*Alnus nepalensis* D. Don.) forest stands in the central Himalaya. **Land Degradation & Development**, doi: 10.1002/ldr.3901. (Impact Factor: 4.977).
9. R. K. Joshi, **S. C. Garkoti*** (2021). Influence of Nepalese alder on soil physico-chemical properties and fine root dynamics in white oak forests in the central Himalaya, India. **Catena**, doi.org/10.1016/j.catena.2020.105140. (Impact Factor: 5.198).
10. Abhishek K. Verma, **S. C. Garkoti*** (2020). Impact of Stand Characteristics on Litterfall Production and Its Decomposition in Chir Pine Mixed Banj Oak Forests in Central Himalaya. **Climate Change and Environmental Sustainability**, 8(2):191-200. doi: 10.5958/2320-642X.2020.00019.8.
11. Mukesh Kumar, Abhishek K. Verma & **S. C. Garkoti*** (2020). Lantana camara and Ageratina adenophora invasion alter the understory species composition and diversity of chir pine forest in central Himalaya, India **Acta Oecologica**. <https://doi.org/10.1016/j.actao.2020.103642>. (Impact Factor: 1.220).
12. Mayank Krishna, Shruti Gupta, Manuel Delgado-Baquerizo, Elly Morriën, **S.C. Garkoti***, Rupesh Chaturvedi & Shandar Ahmad (2020). Successional trajectory of bacterial communities in soil are shaped by plant-driven changes during secondary succession **Scientific Reports**. <https://doi.org/10.1038/s41598-020-66638-x>. (Impact Factor: 3.998).
13. R. K. Joshi & **S.C. Garkoti*** (2020). Litter dynamics, leaf area index and forest floor respiration as indicators for understanding the role of Nepalese alder in white Oak forests in Central Himalaya, India. **Ecological Indicators**. <https://doi.org/10.1016/j.ecolind.2020.106065>. (Impact Factor: 4.229).
14. Napolion Borah & **S.C. Garkoti*** (2020). Indigenous lac culture and local livelihood: a case study of *Karbi* community of Assam, North-Eastern India. **Indian Journal of Traditional Knowledge** Vol 19(1), January 2020, pp 197-207. (Impact Factor: 0.757).

15. M. Krishna, S.K. Singh, J.K. Tripathi, R. Chaturvedi & **S.C. Garkoti*** (2019). Effect of alder on soil bacteria offers an alternative explanation to the role played by alder in rock weathering. **PNAS Letters**. www.pnas.org/cgi/doi/10.1073/pnas.1910718116. (Impact Factor: 11.205).
16. Abhisekh Verma & **S.C. Garkoti*** (2019). Population structure, soil characteristics and carbon stock of the regenerating banj oak forests in Almora, Central Himalaya. *Forest Science and Technology*. doi.10.1080/21580103.2019.1620135. (Impact Factor: 1.09).
17. M S Umesh Babu, Lala Saha & **S.C. Garkoti*** (2019). Changing socio-economic and climate scenario calls for documentation of the traditional knowledge and practices related to riverbed cultivation: a case study of a migrant farming community from Western Himalaya, India, **Agroecology and sustainable food systems**. Doi.10.1080/21683565.2019.1622618. (Impact Factor: 1.636).
18. Nepolion Borah, Florida Devi Athokpam, RL Semwal & **S.C. Garkoti*** (2018). *Chakhao* (Black Rice; *Oryza sativa* L.): A culturally important and stress tolerant traditional rice variety of Manipur. **Indian Journal of Traditional Knowledge**, Vol. 7(4), October 2018, pp. 789-794. (Impact Factor: 0.757).
19. Ferry Slik, J. W.,.....**S.C. Garkoti** et al. (2018). Phylogenetic classification of the world's tropical forests. **PNAS**, 115, (8)1837-1842. <https://doi.org/10.1073/pnas.1714977115>. (Impact Factor: 11.205).
20. Nepolion Borah, RL Semwal & **S.C. Garkoti** (2018). Ethnomycological knowledge of three indigenous communities of Assam, India. **Indian Journal of Traditional Knowledge** Vol. 17 (2), pp 327-335. (Impact Factor: 0.757).
21. Bisht IS, Mehta PS, Negi KS, Rawat R, Singh R, and **S.C. Garkoti** (2017). Wild Plant Food Resources in Agricultural Systems of Uttarakhand Hills in India and Its Potential Role in Combating Malnutrition and Enhancing Human Health. **J Food Sci Toxicol**. Vol.2. No.1:3.
22. Bisht, IS, PS Mehta, KS Negi, SK Verma, RK Tyagi, **S.C. Garkoti** (2017). Farmers' rights, local food systems, and sustainable household dietary diversification: A case of Uttarakhand Himalaya in north-western India. **Agroecology and Sustainable Food Systems** 42 (1), 77-113. (Impact Factor: 1.636).
23. Bashistha, M. & **S.C. Garkoti** (2017). Assessing the Provisioning Services of Forest Ecosystem in a Bhuj Forest, Gujarat. **Applied Ecology and Forestry Science**, doi: 10.12691/aefs-2-1-1.
24. **Garkoti, S.C.** (2016). Carbon Sequestration and Soil Carbon Dynamics: An Introduction to the Special Issue. **International Journal of Ecology and Environmental Sciences** 42 (5), 1-2
25. Athokpam, F.D. & **S.C. Garkoti***, (2015). Dynamics of foliar nitrogen of evergreen and deciduous plant species in a wet tropical forest, South Assam, India. **Plant Ecology**. DOI 10.1007/s11258-015-0496-2. (Impact Factor: 1.829).
26. Athokpam, F.A., **S.C. Garkoti*** & N. Borah (2014). Periodicity of leaf growth and leaf dry mass changes in the evergreen and deciduous species of

- Southern Assam, India. **Ecological Research**. DOI 10.1007/s11284-013-1105-2. (Impact Factor: 1.580).
27. Borah, N., F.A. Athokpam, **S.C. Garkoti***, A.K. Das & D.K. Hore (2014). Structural and compositional variations in undisturbed and disturbed tropical forests of Bhuban hills in south Assam, India. **Journal of Biodiversity Science, Ecosystem Services & Management**. 10:9-19.
 28. **Garkoti, S. C.** (2014). Litter production and nutrient return in two regenerating white oak (*Quercus leucotrichophora* A. Camus) forests in central Himalaya. **International Journal of Ecology and Environmental Sciences** 40: 139-148.
 29. Devi, T.I., P.S. Yadava & **S.C. Garkoti*** (2014). Cattle grazing influences soil microbial biomass in sub-tropical grassland ecosystem at Nambol, Manipur, North-east India. **Tropical Ecology**, 55: 195-206. (Impact Factor: 1.137).
 30. Athokpam, F.D. & **S.C. Garkoti***, (2013). Variation in evergreen and deciduous species leaf phenology in Assam, India. **Trees**. DOI 10.1007/s00468-013-0850-8. (Impact Factor: 2.562).
 31. Arunachalam, K., P. Bordoloi, A. Arunachalam & **S.C. Garkoti** (2013). Bamboo based low-cost vermicomposting technology for the farmers of north-east India. *Indian Farming* 63: 21-23.
 32. **Garkoti, S.C.** (2012). Dynamics of fine root N, P, K in high elevation forests of central Himalayas. *Forestry Studies in China* 14: 1, DOI 10.1007/s11632-012-0203-5.
 33. Borah, N., A. K. Das & **S.C. Garkoti** (2012). Community structure and diversity of tropical forests along disturbance gradients in Barak Valley of Assam, India. *Assam University Journal of Science and Technology* 9:38-45.
 34. Athokpam, F.D., **S.C. Garkoti** & A.K. Das (2012). Shoot growth phenology of *Gmelina arborea* Roxb. in a moist tropical evergreen forest of Southern Assam, India. *Assam University Journal of Science and Technology* 9: 29-37.
 35. **Garkoti, S.C.** (2011). Fine root dynamics in three central Himalayan high elevation forests ranging from closed canopied to treeline vegetation. **Journal of Forest Research** 16:136–143. (Impact Factor: 1.065).
 36. Borah, N. & **S.C. Garkoti*** (2011). Tree species composition, diversity, and regeneration patterns in undisturbed and disturbed forests of Barak Valley, South Assam, India. **International Journal of Ecology and Environmental Sciences** 37:131-141.
 37. **Garkoti, S.C.** (2007). Estimates of biomass and primary productivity in a high altitude maple forest of central Himalaya. **Ecological Research** 23:41-49. (Impact Factor: 1.580).
 38. Singh, S.P., D.B. Zobel, S.C. Garkoti, A. Tewari & C.M.S. Negi (2006). Patterns in water relations of central Himalayan trees. **Tropical Ecology** 47:159-182. (Impact Factor: 1.137).
 39. **Garkoti*, S.C.**, D.B. Zobel & S.P. Singh (2003). Variation in drought response of Sal (*Shorea robusta*) seedlings. **Tree Physiology**. 23: 1021 - 1030. (Impact Factor: 4.196).

40. **Garkoti***, S.C., S.B. Akoijam & S.P. Singh (2002). Ecology of water relations between mistletoe (*Taxilus vestitus*) and its host oak (*Quercus floribunda*). **Tropical Ecology** 43: 243-249. (Impact Factor: 1.137).
41. **Garkoti, S.C.**, D.B. Zobel & S.P. Singh (2001). Leaf conductance of primary and mature leaves of *Pinus roxburghii*: A comparison. **Journal of Forest Research** 6: 1-5. (Impact Factor: 1.065).
42. Zobel, D.B., **S.C. Garkoti**, S.P. Singh, A. Tewari & C.M.S. Negi (2000). Patterns of water potentials among forest types of the central Himalaya. **Current Science** 80: 774-779. (Impact Factor: 1.102).
43. **Garkoti, S.C.**, D.B. Zobel & S.P. Singh (2000). Comparison of water relations of seedlings and trees of two Himalayan oaks. **International Journal of Ecology and Environmental Sciences** 26:213-222.
44. **Garkoti***, S.C. & S.P. Singh (1999). Litter decomposition and nutrient release in Central Himalayan high-altitude forests. **Tropical Ecology** 40: 19-26. (Impact Factor: 1.137).
45. **Garkoti, S.C.** (1999). Changes in weight loss and nutrient composition of woody litter in three forests in high altitudinal zones of Central Himalaya. **Tropical Ecology** 40: 129-136. (Impact Factor: 1.137).
46. Malhotra, P., **S.C. Garkoti**, Y.S. Rawat & S. P. Singh (1999). Morphological differences and habitat relationship of four common herb species of oak and pine forests of Central Himalaya. **Oecologia Montana**7: 15-20.
47. Usman, S., Y.S. Rawat, S.P. Singh & **S.C. Garkoti** (1998). Fine root biomass, productivity and root turnover in evergreen forests of Central Himalaya. **Oecologia Montana** 6: 4-8.
48. Negi, G.C.S., H.C. Rikhari & **S.C. Garkoti** (1998). Hydrological studies in three high altitude forests in Nanda Devi Biosphere Reserve, Kumaun Himalaya. **Hydrological Processes** 12: 343-350. (Impact Factor: 3.256).
49. Singh, S.P., Y.S. Rawat & **S.C. Garkoti** (1997). Failure of brown oak (*Quercus leucotrichophora*) to regenerate in Central Himalaya- A case of environmental semisurprise. **Current Science**. 73: 371-374. (Impact Factor: 1.102).
50. **Garkoti***, S.C. & S.P. Singh (1997). Structure and functioning of herbaceous vegetation in high mountains of Central Himalaya. **Tropical Ecology** 38: 153 - 156. (Impact Factor: 1.137).
51. **Garkoti***, S.C. & S.P. Singh (1996). Patterns of epiphytic biomass and diversity on *Quercus floribunda*. *Advances in Forestry Research in India XV*: 145-154.
52. **Garkoti, S.C.** (1996). Nutrient dynamics in high altitude shrubs of Central Himalaya. **Proceedings of Indian National Science Academy B** 62: 281-286.
53. **Garkoti***, S.C. & S.P. Singh (1995). Forest floor biomass, litter fall and nutrient return in Central Himalayan high altitude forests. **Vegetatio**120: 33-48. (Impact Factor: 1.829).
54. **Garkoti, S.C.** (1995). Shrub layer productivity in Central Himalayan high elevation forests. **Proceedings of Indian National Science Academy B**61: 45-50.

55. **Garkoti***, S.C. & S.P. Singh (1995). Variation in net primary productivity and biomass in the high mountains of Central Himalaya. **Journal of Vegetation Science**. 6: 23-28. (Impact Factor: 2.698).
56. **Garkoti***, **S.C.** & S.P. Singh (1994). Nutrient cycling in three Central Himalayan forests ranging from close-canopied to open-canopied tree-line forests. **Arctic and Alpine Research** 26: 339 - 348. (Impact Factor: 1.784).
57. Joshi, B. & **S.C. Garkoti** (1994). Seasonal changes in fine root biomass in *Quercus floribunda* forest of Central Himalaya. **Bio-Science Research Bulletin** 10: 63-66.
58. Adhikari, B.S., **S.C. Garkoti** & Y.S. Rawat (1993). Productivity of shrub layer in high altitude forest of Central Himalaya. **Advances in Forestry Research in India IX**: 134 - 143.
59. **Garkoti, S.C***, B.S. Adhikari, Y.S. Rawat & N. Pande (1993). An ecological study of epiphytic vegetation on *Quercus leucotrichophora* trees. **Advances in Forestry Research in India. IX**: 122-127.
60. Singh, R.P., B.S. Rana & **S.C. Garkoti** (1993). Biomass and production patterns of three dominant tree species along a girth series in a natural tropical forest of Chakia, Varanasi India. **Indian forester** 119: 472 - 480.
61. **Garkoti***, **S.C.** & S.P. Singh (1992). Biomass, productivity and nutrient cycling in alpine Rhododendron community of Central Himalaya. **Oecologia Montana** 2: 21-32.

(b) *Publications in Books and Proceedings:*

1. Nepolion Borah, Florida Devi Athokpam, Ashesh Kumar Das, and **S.C. Garkoti*** (2019). Aboveground Tree Carbon Stocks Along a Disturbance Gradient in Wet Tropical Forests of South Assam, India. In *Tropical Ecosystems: Structure, functions and challenges in the face of global change*. Springer. doi.org/10.1007/978-981-13-8249-9.
2. **Garkoti S.C.** (2014). Regeneration of white oak (*Quercus leucotrichophora*) in two pine invaded forests in Indian Central Himalaya. In: *Management of Natural Resources in a Changing Environment*, N. J. Raju, W. Gossel and M. Sudhakar, eds., Capital Publishing Company, New Delhi (ISBN 978-93-81891-25-4), 200-205.
3. Borah, N., F.A. Athokpam, **S.C. Garkoti** & A.K. Das (2014). Effect of anthropogenic activities on diversity and regeneration of tree species in tropical forests of Barak valley of Assam, India. In: *Advances in Plant research*, S.I. Bhuyan and S. Kumari, EBH Publishers, India.
4. Athokpam, F.D. & **S. C. Garkoti** (2012). Leaf phenology of some important forest trees in Southern Assam, India. In: *Glimpses of Forestry Research in the Indian Himalayan Region*. G.C.S. Negi and P.P. Dhyani eds., Bishan Singh Mahindra Pal Singh Publishers, Dehradun (ISBN: 978-81-211-0860-7), 75-81.
5. Bordloi, P., D. Balasubramnian, A. Arunachalam, K. Arunachalam & **S.C. Garkoti** (2010). Sustainable crop production through organic farming. In: *Natural Resource Management in North-East India: Linking Ecology, Economics and*

- Ethics, A. Arunachalam and K. Arunachalam, eds., DVS Publishers, Guwahati, 289- 294.
6. Bordloi, P., D. Balasubramanian, A. Arunachalam, K. Arunachalam & **S.C. Garkoti** (2007). Agriculture waste management for sustainable crop production: A case study in Arunachal Pradesh. In: Biodiversity Conservation, B.K. Dutta, A.K. Das and P. Choudhury eds., Avishek Printers and Publishers, Guwahati, 214-218.
 7. **Garkoti, S.C.** (2002). Patterns of water potential and leaf conductance in *Shorea robusta* seedlings. In Recent Advances in Life Sciences, P.S. Yadava ed., 1-8.
 8. Singh, S.P., B.S. Adhikari, **S.C. Garkoti** & Y.S. Rawat (1996). Structural and functional characteristics of the forest ecosystems around Nanda Devi Biosphere Reserve. In: Conservation and Management of Biological Resources in Himalaya, Ramakrishnan et al. eds., Oxford and IBH Publishing Co. Pvt. Ltd., New Delhi, 413-432.

(c) *Books Published:*

1. **SC Garkoti**, RL Semwal, Nepolion Borah & Padma Ladon (2018). Glimpses of traditional societies and their knowledge systems in Indian Himalayan region. Task Force-5, NMSHE, JNU, ISBN: 978-93-5321-621-4.
2. **SC Garkoti**, Skip J Van Bloem, Peter Z Fule & RL Semwal (2019). Tropical ecosystems: Structure, Functions and Challenges in the Face of Global Change. Springer Nature, pp 320, (ISBN 978-981-13-8249-9) (Edited).