

Manoj Kumar
Shalini Dhyani
Naveen Kalra *Editors*

Forest Dynamics and Conservation

Science, Innovations and Policies

 Springer

Author information

Authors and Affiliations

Indian Institute of Science, Bengaluru, Karnataka, India

Indu K. Murthy, Vani Sathyanarayan, M. Beerappa, Savithri Bhat & N. H. Ravindranath

Earthwatch Institute, New Delhi, India

M. A. Khalid, M. Prashant & Sudha Iyer

Corresponding author

Correspondence to [Indu K. Murthy](#).

Copyright information

© 2022 The Author(s), under exclusive license to Springer Nature Singapore Pte Ltd.

About this chapter



Check for updates

Cite this chapter

Murthy, I.K. *et al.* (2022). Biodiversity and Biomass Carbon Dynamics: Insights from Long-Term Monitoring in the Western Ghats. In: Kumar, M., Dhyani, S., Kalra, N. (eds) *Forest Dynamics and Conservation*. Springer, Singapore. https://doi.org/10.1007/978-981-19-0071-6_10

Download citation

[.RIS](#) [.ENW](#) [.BIB](#)

DOI	Published	Publisher Name
https://doi.org/10.1007/978-981-19-0071-6_10	17 May 2022	Springer, Singapore
Print ISBN	Online ISBN	eBook Packages
978-981-19-0070-9	978-981-19-0071-6	Biomedical and Life Sciences Biomedical and Life Sciences (R0)

[Plant–Herbivorous Insect Interactions in Forest Ecosystems: Overview and Perspectives to Mitigate Losses](#)

Eduardo Soares Calixto, Philip G. Hahn
Pages 163-186

[Beyond the Biophysical: Contribution of Community Forestry in Building Social-Ecological Resilience](#)

Lok Mani Sapkota, Chandra Shekhar Silori, Shambhu Prasad Dangal, Maung Maung Than, Tol Sokchea, Kirivuth Chhneang et al.
Pages 187-211

[Biodiversity and Biomass Carbon Dynamics: Insights from Long-Term Monitoring in the Western Ghats](#)

Indu K. Murthy, M. A. Khalid, Vani Sathanarayan, M. Beerappa, Savithri Bhat, M. Prashant et al.
Pages 213-230


[Peri-urban Protected Forests in Peril: Insights from Case Studies in Two Indian Megacities](#)

B. Dhanya, Samudiyatha Ramananda, Rupal Jain, Pragyi Baghel
Pages 231-248

[Mapping the Extent of Invasive Species: An Assessment Based on High-Resolution Data for Selected Species in Parts of Eastern Himalaya in Sikkim](#)

Rohit Kumar, Akhilesh Singh, Uttara Pandey, Parul Srivastava, Swapan Mehra
Pages 249-259

Biodiversity and Biomass Carbon Dynamics: Insights from Long-Term Monitoring in the Western Ghats

[Indu K. Murthy](#) , [M. A. Khalid](#), [Vani Sathyanarayan](#), [M. Beerappa](#), [Savithri Bhat](#), [M. Prashant](#), [Sudha Iyer](#) & [N. H. Ravindranath](#)

Chapter | [First Online: 17 May 2022](#)

323 Accesses

Abstract

Management and conservation of forests are subject to pressures and disturbances. Planning and management of forests for conservation require information on the biodiversity, socio-economic dependence, forest biomass, and carbon. Long-term studies help generate such information on the structure and function of forests. The current study was conducted in the Uttara Kannada District of Karnataka in the Western Ghats region. The dynamics of forest ecosystems was studied through permanent plots of 1 ha in the evergreen and deciduous forest types, and the socio-economic aspects through household surveys in villages in the proximity of the permanent plots, for assessing the dependence on forests. The biomass estimates for the evergreen forest plots were 301–341 t/ha and those for deciduous forest plots were 258–336 t/ha. This is despite large dependence of households in the range of 10–48% on the forests for food, fodder, firewood, manure, and other NTFPs. Long-term data on the growth and mortality rates of economically important species, forest carbon balance, and the impact of climate change on forest composition are central to effective management. However, this information is rarely integrated within the policymaking process. This data could be utilized through integration at three points—the policy window, the decision window, and the networking window. Creating these policy, decision and networking windows will allow use of information from permanent plots for effective and efficient management of forest ecosystems, making them resilient to systemic and chronic shocks—both climate and non-climate.

Keywords

Permanent plots

Biomass

NTFPs

Disturbance

Forest management