Metadata analysis

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##What is the status of publishing on tree inventories in India? : An assessment using the novel INvenTree dataset

## Introduction/Background

Global analyses draw on sparse data from the tropics, particularly from South Asian forests. Even though data from India - representing two-thirds of South Asia - exists, a barrier to syntheses is the absence of standardised and accessible data. To address this gap, we formed the India Tree Inventory (INvenTree, <https://inventree.weebly.com>) Network to harmonise published tree data from forest plots across India into an aggregate inventory and identify geographic and human dimensions of data gaps across biomes in India.

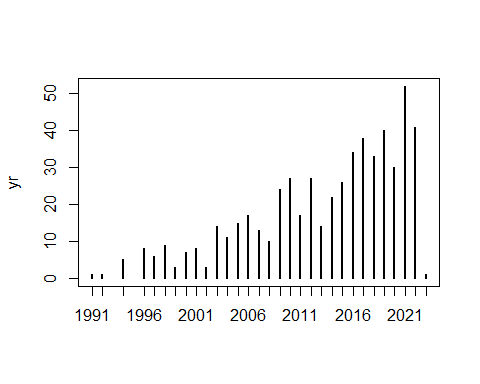
## Objectives

Our objectives are to understand (1) who and where tree-based data on India was being published from, (2) to understand geographic gaps in sampling effort (3) status of data availability across studies.

## Methods

We created a database of peer-reviewed articles published between 1991-2023 from Indian ecosystems that use tree inventory information from multispecies communities. We used a Web of Science Search to search abstracts for the terms ((tree diversity OR forest structure OR (tree\* AND biomass) OR (forest\* AND biomass\*) OR carbon stock OR vegetation survey\* OR vegetation sampling OR (tree\* AND plot\*) OR (forest\* AND plot\*) OR (measur\* AND tree\*) OR (checklist\* AND flora\*) OR (checklist\* AND tree\*) OR (checklist\* AND plant\*)) AND India), that produced 3353 entries. Although this might result in many false positives, we intended to cast a wide net. We then manually sorted these for relevance using three criteria -*) a) reports on data from multi-species tree communities b) either using plot, transect or checklist c) in India*.

With this filtered dataset, we looked for trends in publication. We used WoS tools to derive publication year, journal names, authors and affiliations. We used Google maps based tools to extract locations of author affiliations. We analysed this using community ecology methods, following Mori et al 2015.



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## For a short introduction type : vignette('rworldmap')

## Results

We have completed phase I of the INvenTree metadata analysis. Manual sorting resulted in 592 publications that report tree inventories either using plot/transect methods (n=443), checklists (n=47) while 79 were of uncertain methods.

Preliminary results show that publications spanned 489 journals, with the top 3 being TROPICAL ECOLOGY (n=47), CURRENT SCIENCE (n=30) and BIODIVERSITY AND CONSERVATION (n=27). The Shannon’s diversity of journals was 4.5339961, suggesting high dominance.

Corresponding authors were predominantly affiliated to institutions in India (n=362 out of 592), followed by United States of America (n=23). Across the papers, there were 2000 points of authorship with the most number (n=1449) from India. Authors were second most frequently from United States of America (n=61).

In ongoing analyses, we are assessing the spread and accessibility of the data as well as gaps.

## Implications

Based on our metadata analysis, we identify opportunities for collaboration and data sharing among Indian scientists as well as between Indian scientists and foreign collaborators to further the goals of understanding forest dynamics in the region. We thus motivate the INvenTree network to share and synthesise tree-based data that will help fill crucial gaps in our understanding of forest dynamics from the region and allow novel syntheses and application.