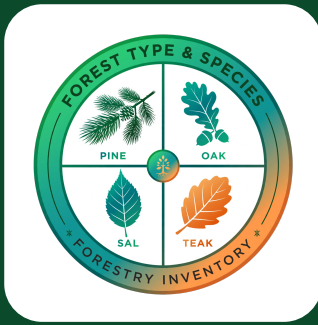




Forest Type & Tree Species Mapper

User Manual

Map forest types, find tree species records and produce print-ready map sheets.
Everything runs in your web browser.

Powered by ROOTPIXIN Solutions Pvt. Ltd.

Root Level Pixel Information

Contents

- Before you start
- Quick start
- Inputs in detail
- Reading the results
- Map composition and downloads
- Data exports
- How forest types are built
- Limits to keep in mind
- Troubleshooting

Before you start

- **Open the file from your computer** in a modern browser (Chrome, Edge or Firefox). The Claude preview blocks the data services the tool needs.
- **Stay online.** The tool reads GBIF, OpenStreetMap, Open-Meteo, map tiles and the PDF library from the internet.
- **Keep the image folder next to the HTML file.** It holds FTLogo.png and Logo.png, which appear in the page header and on every map sheet.
- **Prepare a study area KML** that contains one or more polygons. This is the only required input.

To change a logo, click it in the page header and choose an image. The new logo is used on all map pages.

Quick start

- 1 Upload the study area.** In card 1, choose your KML. The map zooms to it and shows the area in hectares.
- 2 Choose how to get the forest type.** Leave "Build detailed forest type automatically" ticked, or upload an official forest type KML in card 2.
- 3 Choose tree species points.** Leave "Fetch plant records from GBIF" ticked, and add your own CSV if you have field data (card 3).
- 4 Select Run analysis.** Wait for the status line to say "Done". A large area can take a minute.
- 5 Check the Web map and the tables,** then open the Map composition tab to prepare the printed sheets.
- 6 Download** the PDF or PNG pages, and export KML or CSV files if you need the data.

Inputs in detail

1. Study area

A KML with polygons. Multiple polygons are merged into one study area. A KML with only points or lines is rejected with the message "No polygon found in KML".

2. Forest type

Option	What it does
Build detailed forest type automatically	Combines OpenStreetMap forest polygons with a climate-zone grid made from elevation and rainfall. The whole study area is covered, so there are no blank patches.
Also derive forest type from tree species	Off by default. When on, an area with at least 2 species points where one species group makes up 50% or more is renamed, for example "... - Sal dominant". Groups: Sal, Teak, Pine, Deodar, Oak, Rhododendron, Mangrove, Thorn / Acacia, Sissoo / Dalbergia, Plantation, Bamboo, Fir / Spruce / Juniper, Mixed broadleaved.
Upload an official forest type KML	Use a Champion & Seth or FSI layer. Pick the attribute that holds the forest type name. This replaces the automatic build.

3. Tree species points

- **GBIF.** Downloads plant occurrence records inside the study area (up to 3,000 per polygon).
- **Field CSV.** Needs the columns lat, lon and species. Optional columns: dbh_cm (adds mean DBH and basal area) and local_name.
- **Local name language.** Choose Hindi, English or Any. GBIF supplies the names, and a local_name column in your CSV overrides GBIF.

```
lat,lon,species,dbh_cm,local_name
25.6021,85.1385,Shorea robusta,32.5,Sal
25.6034,85.1402,Tectona grandis,28,Sagwan
```

Reading the results

- **Summary boxes:** study area (ha), number of forest types, species, records, and Shannon H'. A higher Shannon H' means a more even mix of species.
- **Web map:** switch between OpenStreetMap, Esri Satellite and Esri Topographic. Use the layer control to show or hide forest types, the study area, tree points and point IDs. Click any polygon or point for details.
- **Layers and colours:** tick a type to show it, or pick a colour. The colour is used on the map, in the legend and in the KML.
- **Forest type area:** hectares and percent of the study area for each type.
- **Species composition:** trees, percent, mean DBH and basal area per species, with the local name beside it.
- **Location-wise species list:** every point with an ID, coordinates and forest type. The table shows the first 3,000 points.

Map composition and downloads

The **Map composition** tab builds a bordered map sheet with title, graticule, north arrow, scale bar, legend and source notes. Extra pages list every species point. Change any setting and the pages refresh at once.

Group	Settings
Text	Map title, subtitle (place or district), prepared by.
Page	A4, A3, A2, A1 or Letter; landscape or portrait; font; resolution of 150, 300 or 600 dpi.
Title style	Size, colour, bold, italic.
Body text	Size, colour, bold, italic, and italic species names.
Map	Graticule colour and on/off, species in legend, point IDs on map.

- **Download PDF (all pages)** saves one PDF directly. PDF pages use up to 200 dpi to keep the file a sensible size.
- **Download all pages (PNG)** saves one image per page at the dpi you chose.
- Each page also has its own **PNG** and **SVG** button. SVG stays sharp at any size and opens in design software.

The logos on the sheets come from the page header. Add a logo there once and it appears on every page.

Data exports

Button	File	Contents
Export KML	forest_type_species.kml	Study area, forest type polygons with area, and tree points with ID, species, local name, forest type and DBH. Opens in Google Earth and GIS software.
Summary CSV	forest_summary.csv	Area by forest type, and trees, local name, mean DBH and basal area by species.
ID list CSV	species_id_list.csv	One row per point: ID, species, local name, latitude, longitude, forest type, DBH.

How forest types are built

- The study area is divided into a 24 by 24 grid. Each cell gets its elevation from Open-Meteo.
- Rainfall is the 2016 to 2023 yearly average from Open-Meteo, spread across the area from a 4 by 4 set of sample points.
- Each cell is classed by elevation and rainfall, from alpine and temperate types down to moist deciduous, dry deciduous, savanna and thorn forest. Deciduous types are named Northern or Southern at about 22 degrees N.
- Forest polygons from OpenStreetMap are placed on top and named by the zone plus the OSM leaf type: needleleaved, broadleaved, mixed, plantation, mangrove or scrub.
- Remaining land takes the zone type with the label **Open / non-forest**, so the map has no empty space.

This is an estimate, not an official forest type map. For official work, upload a Champion & Seth or FSI KML in card 2.

Limits to keep in mind

- GBIF records are observations by many people, not a tree inventory. Counts show where species were recorded, not how many trees grow there.
- OpenStreetMap shows only the forest that volunteers have mapped. Many forests have no leaf-type tag, and these appear as "Forest (leaf type not tagged)".
- In flat areas with the same rainfall, the climate grid may give one zone. Upload an official layer, or switch on species-based types, for more detail.
- Rainfall and elevation come from online models. They suit regional work, and are not a substitute for field survey.
- Local names are fetched for up to 200 species. Some species have no recorded local name.

Troubleshooting

Message or problem	What to do
GBIF fetch failed: network blocked or offline	Check your internet connection. Open the HTML from your computer, not from a preview window.
Forest type build failed: elevation or rainfall service unreachable	Wait a minute and run again. If it keeps failing, upload a forest type KML.
No polygon found in KML	The KML must contain polygons. Convert lines or points to polygons in your GIS first.
CSV needs lat, lon and species columns	Rename the header row to match the names in this manual.
A logo is missing	Check the image folder and file names, or click the header logo and choose the file.
PDF library not loaded	Reconnect to the internet and reload the page. You can use the PNG or SVG downloads meanwhile.
Image too large	Lower the resolution, use a smaller page size, or download SVG.
Pop-ups or downloads blocked	Allow downloads for this page in your browser settings.