NATURE'S PHARMACY PROJECT

Visible Habitat Profile (VHP)

Practitioner's Interpretation Guide · How to read your three field measurements · Version 3.3 · August 2026

What the ranges tell you

Each field value is compared with the forest data used to create its reference range. Values below the lower boundary are Low, values between the two boundaries are Typical, and values above the upper boundary are High. Keep the raw measurement alongside the range placement. In the Plot Workbook, enter the native count, each qualifying CWD crossing, and the five litter readings; the workbook calculates CWD volume and mean litter depth before assigning the range placements.

The categories describe forest structure relative to the stated reference data. Together, the three placements form a structural habitat profile, with each measurement interpreted against its own reference data. The useful question is simple: is this feature relatively low, typical, or high compared with the forests used as its reference?

The three ranges at a glance

Measurement	Low / Typical / High	Compared with
Native woody richness	<6 / 6–11 / >11 species per 400 m²	875 quadrats within the Harvard Forest ForestGEO 35-ha plot
Coarse woody debris	<8.4 / 8.4–46.7 / >46.7 m³/ha	185 FIA hardwood and mixed-forest plots in VT, NH, MA, CT, and RI
Identifiable surface-litter depth	<2.2 / 2.2–3.5 / >3.5 cm	The same 185 FIA plots

1. Native woody richness

Why it matters. Native woody species differ in their roots, litter, and host relationships, so richness provides a simple view of the variety of plant-derived inputs present in a plot. Species identity and composition also matter.

Your count	What the range means	What to consider
<6 species — Low	Below the lower reference boundary of the Harvard Forest reference.	A low count may prompt a closer look at regeneration, deer browsing, invasive plants, or past land use.
6–11 species — Typical	Between the lower and upper reference boundaries of the Harvard Forest reference.	Record which native species are present and consider species composition and other site conditions when relevant.
>11 species — High	Above the upper reference boundary of the Harvard Forest reference.	The plot is relatively species-rich within this reference. Composition still matters as well as the number of species.

Count native trees, shrubs, and woody vines only when at least one living stem reaches 1 cm DBH. Non-native woody species do not enter the richness count.

2. Coarse woody debris

Why it matters. Fallen wood provides substrate for decomposers, retains moisture locally, and creates distinct decomposition microsites. Plot-level volume is useful, but a single plot can be strongly influenced by whether a few large pieces happen to cross the transects.

Your volume	What the range means	What to consider
<8.4 m³/ha — Low	Below the lower reference boundary of the regional FIA reference.	Look at whether fallen wood is being removed, whether the stand is young, or whether little time has passed for large pieces to accumulate.
8.4–46.7 m³/ha — Typical	Between the lower and upper reference boundaries of the regional FIA reference.	This is a common amount in the forests represented by the reference data. Use several plots before drawing conclusions about a site.
>46.7 m³/ha — High	Above the upper reference boundary of the regional FIA reference.	High volume can reflect long accumulation, recent windthrow, or harvest slash. Site history helps explain why the value is high.

3. Identifiable surface-litter depth

Why it matters. Surface litter supplies organic material and influences moisture and temperature at the forest floor. Standing depth reflects both how much material reaches the ground and how quickly it decomposes.

Your depth	What the range means	What to consider
<2.2 cm — Low	Below the lower reference boundary of the regional FIA reference.	Thin litter may reflect recent disturbance, species composition, rapid decomposition, or low recent inputs.
2.2–3.5 cm — Typical	Between the lower and upper reference boundaries of the regional FIA reference.	Interpret the depth as the balance between litter inputs and decomposition rather than as a direct measure of soil condition.
>3.5 cm — High	Above the upper reference boundary of the regional FIA reference.	A deeper layer means more identifiable surface material is present. It does not automatically mean better soil conditions.

Measure only loose, recognizable leaves and plant material above the decomposed organic layer. Do not measure to mineral soil.

4. Optional context for interpretation

The VHP requires only the three measurements above. Note non-native or invasive vegetation, browsing, disturbance, or other site conditions only when they seem useful for interpreting a result. These observations do not change the Low, Typical, or High placement and are not standardized VHP measurements.

For example, a Low native-richness result may prompt a closer look at regeneration, browsing, invasive vegetation, or past land use, but the VHP does not require those contextual conditions to be measured on every plot.

Reading a whole plot

Read the three measurements separately. Do not combine the Low, Typical, and High placements into a single score. Richness is compared with the Harvard Forest census, while deadwood and litter are compared with the regional FIA reference data.

Worked example

Native woody richness: 4 species — Low. The plot falls below the lower boundary of the Harvard Forest reference. This could prompt a closer look at regeneration, browsing, invasive plants, or past land use.

Coarse woody debris: 11 m^3/ha — Typical. The value falls within the Typical range of the regional FIA reference. Because deadwood is patchy, the pattern across several plots is more informative than this one plot alone.

Identifiable surface-litter depth: 3.4 cm — Typical. The plot falls within the Typical range of the regional FIA reference. The depth reflects both litter input and decomposition.

In this example, native woody richness is the only Low feature, so it is the clearest place to investigate further. The VHP identifies which measured feature may warrant further investigation, while stewardship decisions are made in light of the site's broader conditions and history.

If nothing is Low

If nothing is Low, none of the three measured features falls below the lower boundary of its reference data. Review the three measurements alongside site history and any other site-specific concerns when deciding whether a feature warrants attention.

Quick interpretation rules

- Keep the raw measurement with every range placement.
- Interpret deadwood across several plots when possible because large pieces are patchy.
- Use the exact litter and stem-size definitions in the field instructions before comparing values with the ranges.
- Use site history where it is available to help explain unusual values, especially high deadwood.