**About the datasets**

**GEDI L2B Canopy Cover and Vertical Profile Metrics Data Global Footprint Level V002**

Canopy cover

Total canopy cover, defined as the percent of the ground covered by the vertical projection of canopy material

In percent (0-1)

Or

Cumulative canopy cover from height (z) to ground (z=0) with a vertical step size of dZ, where cover(z > z\_max) = 0

Formatted as cover0-10 etc?

Plant area index

Total plant area index (m²/m²)

“aggregated leaf and woody plant materials, such as stems, twigs, and fine branches” ([Macfarlane et al., 2007](https://www-sciencedirect-com.qe2a-proxy.mun.ca/science/article/pii/S016819231730299X" \l "bib0075), [Zhao et al., 2011](https://www-sciencedirect-com.qe2a-proxy.mun.ca/science/article/pii/S016819231730299X" \l "bib0190)) (<https://www-sciencedirect-com.qe2a-proxy.mun.ca/science/article/pii/S016819231730299X>)

Also plant area volume index profile: “describes the distribution of plant elements from ground to canopy top” Formatted as PAI0-10 etc?

Foliage height diversity

Foliage height diversity index calculated by vertical foliage profile normalized by total plant area index

“discretizing the canopy into height classes and primarily reflects vertical complexity, as opposed to the horizontal complexity” (<https://esajournals.onlinelibrary.wiley.com/doi/full/10.1002/ecs2.3390>)

“captures vertical structural complexity and is a likely candidate for inclusion in successful predictions of biodiversity from airborne and spaceborne LiDAR sensors”

pgap

pgap “probability that ground surface is directly visible to airborne and spaceborne platforms” <https://www-sciencedirect-com.qe2a-proxy.mun.ca/science/article/pii/S0924271617303726>

Pgap\_z = “Vertical gap fraction profile (vertical *P*gap profile) is a function of the *P*gap with height. It describes the gap fraction value at each height above ground in the canopy”

Height\_bin0 = Height of the first bin of the pgap\_theta\_z, relative to the ground

Height\_lastbin = Height of the last bin of the pgap\_theta\_z, relative to the ground

Vertical profile metrics

Foliage clumping index = quantifying the level of foliage grouping within distinct canopy structures relative to a random distribution

**Global Land Cover Mapping and Estimation Yearly 30 m V001**

Land cover type

Integer identifier for class in the current year

| **QA Value** | **QA Name** | **Description** |
| --- | --- | --- |
| 1 | Water | Areas covered with water throughout the year: streams, canals, lakes, reservoirs, and oceans. |
| 2 | Ice/Snow | Land areas where snow and ice cover is greater than 50% throughout the year. |
| 3 | Developed | Areas of intensive use; land covered with structures, including any land functionally related to developed/built-up activity. |
| 4 | Barren/Sparsely Vegetated | Land consists of natural occurrences of soils, sand, or rocks where less than 10% of the area is vegetated. |
| 5 | Tree Cover | Land where the tree cover is greater than 30%. Note that cleared trees (i.e., clear-cuts) are mapped according to current cover (e.g., barren/sparsely vegetated, shrubs, or grasses). |
| 6 | Shrublands | Land with less than 30% tree cover, where total vegetation cover exceeds 10% and shrub cover is greater than 10%. |
| 7 | Herbaceous | Land covered by herbaceous cover. Total vegetation cover exceeds 10%, tree cover is less than 30%, and shrubs comprise less than 10% of the area. |

<file:///Users/emmersonEmmerson/Downloads/gedi_l2b_dictionary_P003_v2%20(1).html>

| **SDS Name** | **Description** | **Units** | **Data Type** | **Fill Value** | **No Data Value** | **Valid Range** | **Scale Factor** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| cover | Total canopy cover | Percent | 32-bit floating point | -9999 | N/A | 0 to 1 | N/A |
| cover\_z | Cumulative canopy cover vertical profile | Percent | 32-bit floating point | -9999 | N/A | 0 to 1 | N/A |
| fhd\_normal | Foliage Height Diversity | N/A | 32-bit floating point | -9999 | N/A | N/A | N/A |
| l2a\_quality\_flag | L2A quality flag | Quality Flag | 8-bit unsigned integer | N/A | N/A | 0, 1 | N/A |
| l2b\_quality\_flag | L2B quality flag | Quality Flag | 8-bit unsigned integer | N/A | N/A | 0, 1 | N/A |
| omega | Foliage Clumping Index | N/A | 32-bit floating point | N/A | N/A | 0, 1 | N/A |
| pai | Total Plant Area Index | m²/m² | 32-bit floating point | -9999 | N/A | N/A | N/A |
| pai\_z | Plant Area Index profile | m²/m² | 32-bit floating point | -9999 | N/A | N/A | N/A |
| pavd\_z | Plant Area Volume Density profile | m²/m³ | 32-bit floating point | -9999 | N/A | N/A | N/A |
| pgap\_theta | Total Gap Probability (theta) | N/A | 32-bit floating point | -9999 | N/A | 0, 1 | N/A |

Rest of terms on [site](https://lpdaac.usgs.gov/products/gedi02_bv002/)