The GLASS-GLC data set is the first record of 34-year long annual dynamics of global land cover spanning from 1982 to 2015 at 5 km resolution. It was built with the latest version of GLASS (The Global Land Surface Satellite) CDRs (Climate Data Records) and generated on the Google Earth Engine (GEE) platform. The average overall accuracy for the 34 years each with 7 classes, including cropland, forest, grassland, shrubland, tundra, barren land, and snow/ice, is 82.81 %.

The annual global land cover map (5 km) is presented in a GeoTIFF file format named in the form of ‘GLASS-GLC\_7classes\_year’ with a WGS 84 projection. The relationship between the labels in the files and the 7 land cover classes is shown in the following table.

**Table 1 Classification system, with 7 land cover classes.**

|  |  |  |  |
| --- | --- | --- | --- |
| Label | Class | Subclass with reference to ([Li et al., 2017](#_ENREF_50)) | Description |
| 10 | Cropland | Rice paddy |  |
| Greenhouse |
| Other farmland |
| Orchard |
| Bare farmland |
| 20 | Forest | Broadleaf, leaf-on | Tree cover≥10%;  Height>5m;  For mixed leaf, neither coniferous nor broadleaf types exceed 60% |
| Broadleaf, leaf-off |
| Needle-leaf, leaf-on |
| Needle-leaf, leaf-off |
| Mixed leaf type, leaf-on  Mixed leaf type, leaf-off |
| 30 | Grassland | Pasture, leaf-on | Canopy cover≥20% |
| Natural grassland, leaf-on |
| Grassland, leaf-off |
| 40 | Shrubland | Shrub cover, leaf-on | Canopy cover≥20%;  Height<5m |
| Shrub cover, leaf-off |
| 70 | Tundra | Shrub and brush tundra  Herbaceous tundra |  |
| 90 | Barren land | Barren land | Vegetation cover<10% |
| 100 | Snow/Ice | Snow |  |
| Ice |  |
| 0 | No data |  |  |

For more details, please refer to the paper at https://www.earth-syst-sci-data-discuss.net/essd-2019-23. When you use the data set, please also cite this paper as follows:

*Liu, Han, Peng Gong, Jie Wang, Nicholas Clinton, Yuqi Bai, and Shunlin Liang. "Annual Dynamics of Global Land Cover and its Long-term Changes from 1982 to 2015." Earth Syst. Sci. Data Discuss 2019 (2019): 1-54.*

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