



# Functional trait map of southeast Asia (Leaf toughness)

## 1. IDENTIFICATION INFORMATION

|                     |   |
|---------------------|---|
| Name                | Functional trait map of southeast Asia (Leaf toughness)             |
| Metadata Identifier | GRENE_ei_EcoBiodiv_TraitMap_SE_Asia_Leaf_Toughness20230727092213-en |

## 2. CONTACT

### 2.1 CONTACT on DATASET

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### 2.2 CONTACT on PROJECT

## 3. DOCUMENT AUTHOR

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## 4. DATASET CREATOR

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| Name         | Tohru Nakashizuka |
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| Name         | Hiroko Kurokawa                                 |
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|--------------|-------------------|
| Name         | Masahiro Aiba     |
| Organization | Tohoku University |

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## 5. DATE OF THIS DOCUMENT

2023-07-27

## 6. DATE OF DATASET

creation : 2016-03-01

## 7. DATASET OVERVIEW

### 7.1 Abstract

This data contains leaf toughness map of southeast Asia. For the details of data provision and term of use, please contact us by e-mail.

### 7.2 Topic Category(ISO19139)

environment

biota

### 7.3 Temporal Extent

|                          |   |
|--------------------------|---|
| Begin Date               | 1998-04-01  |
| End Date                 | 2000-03-31  |
| Temporal Characteristics | The duration of satellite images which used for creation of original vegetation map were acquired |

### 7.4 Geographic Bounding Box

|                      |               |
|----------------------|---------------|
| North latitude bound | 29.659077285  |
| West longitude bound | 87.682992715  |
| Eastbound longitude  | 155.004410515 |
| South latitude bound | -12.109773175 |

### 7.5 Grid

| Dimension Name | Dimension Size (slice number of the dimension) | Resolution Unit |
|----------------|--|-----------------|
| row            | 42   | 4678 (deg)      |
| column         | 67   | 7540 (deg)      |

### 7.6 Geographic Description

## 7.7 Keywords

### 7.7.1 Keywords on Dataset

| Keyword Type | Keyword  | Keyword thesaurus Name |
|--------------|--|------------------------|
| theme        | Ecosystems, Biodiversity   | GEOSS                  |
| theme        | Biosphere > Terrestrial Ecosystems > Forests, Biosphere > Terrestrial Ecosystems > Alpine/Tundra, Biosphere > Terrestrial Ecosystems > Montane Habitats, Biosphere > Terrestrial Ecosystems > Shrubland/Scrub, Biosphere > Ecological Dynamics > Community Dynamics > Biodiversity Functions, Land Surface > Land Use/Land Cover > Land Resources, Biosphere > Terrestrial Ecosystems > Wetlands > Peatlands, Biosphere > Terrestrial Ecosystems > Wetlands > Swamps | GCMD_science           |
| theme        | BIOGEOSCIENCES > Ecosystems, structure and dynamics, BIOGEOSCIENCES > Biodiversity   | AGU                    |
| theme        | Biodiversity, Ecosystem Function/Dynamics  | GEO_COP                |
| place        | Asia > Eastern Asia > Japan  | Country                |
| discipline   | Leaf toughness   | No_Dictionary          |

### 7.7.2 Keywords on Project

## 7.8 Online Resource

## 7.9 Data Environmental Information

Value of 0 denotes sea/water/no vegetation pixel. Value of  $-1.7e+308$  denotes NoData.

## 7.10 Distribution Information

| name | version | specification |
|------|---------|---------------|
| TIFF | 6.0     | GeoTIFF       |

# 8. DATA PROCESSING

## 8.1 Data Processing (1)

### 8.1.1 General Explanation of the data producer's knowledge about the lineage of a dataset

Two vegetation maps of insular and continental southeast Asia (Stibig et al. 2002; Stibig and Beuchle 2003) were combined to make a vegetation map of whole southeast Asia. To classify secondary vegetation by its primary vegetation type, primary vegetation type of pixels denoting secondary vegetation were estimated by a statistical model in which climate condition (WorldClim, Hijmans et al. 2002) and soil type (Harmonized World Soil Database, FAO/IIASA/ISRIC/ISSCAS/JRC, 2012) are

used as predictor variable. The leaf lignin concentration map was made by assigning values of leaf toughness (force to tearing,  $\log_{10}(\text{kN/m})$ ) for each pixel of this new vegetation map based on their vegetation type.

## 8.1.2 Data Source

| Data Source Citation Name  | Description of derived parameters and processing techniques used |
|--|--|
| Stibig, Beuchle, and Janvier (2002) Forest cover map of insular southeast Asia at 1:5 500 000 derived from SPOT-VEGETATION satellite images. TREES Publication Series D: Thematic outputs n° 3.        |  |
| Stibig and Beuchle (2003) Forest cover map of continental southeast Asia at 1:4 000 000 derived from SPOT4-VEGETATION satellite images. TREES Publication Series D: Thematic outputs n° 4.             |  |
| Hijmans, R.J., S.E. Cameron, J.L. Parra, P.G. Jones and A. Jarvis, 2005. Very high resolution interpolated climate surfaces for global land areas. International Journal of Climatology 25: 1965-1978. |  |
| FAO/IIASA/ISRIC/ISSCAS/JRC, 2012. Harmonized World Soil Database (version 1.2). FAO, Rome, Italy and IIASA, Laxenburg, Austria.  |  |

## 9. DATA REMARKS

## 10. DATA POLICY

### 10.1 Data Policy by the Data Provider

### 10.2 Data Policy by the Project

## 11. LICENSE

## 12. DATA SOURCE ACKNOWLEDGEMENT

### 12.1 Acknowledge the Data Provider

### 12.2 Acknowledge the Project

## 13. REFERENCES