

ICS 65.020.99
CCS B 60

LY

**INDUSTRY STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

LY/T 3126-2019

Framework for forestry spatial database construction

林业空间数据库建设框架

(English Translation)

Issued on: October 23, 2019

Implemented on: April 1, 2020

Issued by: State Forestry and Grassland Administration

Table of Contents

Contents	
Foreword	
Forestry spatial database construction framework	
1 Scope	
2 Normative references	
3 Terms and definitions	
4 Construction Contents and Requirements	
5 Workflow	
6 Data source preparation	
7 Data processing	
8 Data storage	
9 Data update	
10 Quality Control	
11 Construction achievements	
12 Data security	
Appendix A (Normative Appendix) Data Source Requirements	
Appendix B (Normative Appendix) Data Inspection Contents	

Foreword

This standard was drafted in accordance with the rules given in GB/T 1.1-2009.

This standard was proposed by the Information Center of the State Forestry and Grassland Administration.

This standard is under the jurisdiction of the National Forestry Information and Data Standardization Technical Committee (SAC/TC 386).

1 Scope

This standard mainly regulates the construction content and requirements of forestry spatial databases, workflow, data source preparation, data processing, data storage, Framework requirements for data updates, quality control, construction results, and data security.

This standard applies to the construction of forestry spatial databases.

2 Normative references

The following documents are essential for the application of this document. For dated references, only the dated version applies to this document.

For undated references, the latest version (including all amendments) applies to this document.

GB/T 13989 National Basic Scale Topographic Map Fraction and Numbering GB/T 13923 Classification and codes of basic geographic information elements GB/T 14911 Basic Terms for Surveying and Mapping GB/T 16820 Cartographic Terminology LY/T 1954-2011 Forest Resource Survey Satellite Remote Sensing Image Map Production Technical Specification LY/T 2169 General Specification for Forestry Database Design LY/T 2174 Technical Specification for Forestry Database Update LY/T 2179 Wild animal and plant information classification and code LY/T 2180 Forest Fire Information Classification and Code LY/T 2181 Wetland information classification and code LY/T 2182 Desertification information classification and code LY/T 2184 Forest resource database classification and naming convention LY/T 2265-2014 forestry information terminology LY/T 2266 Forestry Information Metadata

3 Terms and definitions

The terms and definitions established in GB/T 14911, GB/T 16820, LY/T 2265-2014, and the following terms and definitions apply to this standard.

Forestry spatial database A collection of forestry spatial data organized according to a conceptual structure, which describes the characteristics of forestry spatial data and the relationships between entities corresponding to the data System and supports one or more application areas.

Note: Rewrite LY/T 2265-2014, definition 3.3.21.

Vector data

Generic term for graphical data such as spatial points, lines, and areas represented by coordinates or ordered coordinate strings, and related attribute data associated with them.

[GB/T 16820]

Raster data

Divides geospatial into cells arranged in rows and columns, each with a different "value" dataset.

[GB/T 16820]

Metadata

Descriptive data about the content, quality, condition, and other characteristics of the data.

[GB/T 14911]

4.1 Database contents

According to LY/T 2169, the forestry spatial database can be divided into public basic spatial database, forestry basic spatial database, and forestry thematic space database.

Database and forest spatial data metadata database. The public basic spatial database stores digital line drawing topographic maps, digital elevation models, digital Raster map, digital orthophoto, remote sensing image data; forestry basic spatial database stores forest resource spatial data, wetland resource space Data, spatial data of desertified land and spatial data of biodiversity; the spatial database of forestry special topics stores spatial data of forest resources management, forestry Forestry thematic spatial data such as forest cultivation spatial data and ecological construction spatial data; the forest spatial data metadata database stores forestry vector data elements Data and forestry raster data metadata, see Table 1 for details.

Table 1 Forestry spatial database contents

Main content of major categories Public basic spatial database Digital Line Drawing Topographic Map Series Digital Line Drawing Topographic Map Digital Elevation Model Digital Raster Map Series Digital Raster Map Digital Orthophoto Remote sensing image satellite image, aerial image, etc.

Forestry Basic Spatial Database Forest resource database Forest resource continuous inventory data, forest resource planning design survey data, etc.

Wetland resource database, wetland survey and monitoring data, etc.

Desertification land database Desertification and desertification monitoring data, etc.

Biodiversity database wildlife data, nature reserves data, etc.

Forestry Thematic Spatial Database Forest resource management database public welfare forest data, forest harvesting data, forest land and forest tenure data, etc.

Database of forest cultivation and ecological construction Forestry spatial data metadata Forestry Vector Data Metabase Digital linear topographic maps, forest resources, wetland resources, desertified land, Metadata for forestry and other forestry vector data Forestry raster data metadata database Remote sensing image, digital elevation model, digital raster map, digital orthophoto Metadata such as raster data

4.2 Data types

Divided by data type, forestry spatial data includes vector data and raster data. Vector data contains digital linear topographic maps and vector data for various forestry operations such as forest resources, wetland resources, desertified land, and afforestation; raster data contains for raster data such as digital elevation model and digital raster map, see Table 2 for details.

Table 2 Classification of forestry spatial data types

Data type	Data content	Vector data class	Digital Line Topographic Map	Forest resources
vector data	Wetland resources	vector data	Desertification and desertification land	vector data
Raster Data	Class Remote sensing image	Digital elevation model	Digital raster map	

4.3.1 Mathematics

a) Coordinate system Use.2000 national geodetic coordinate system;

b) Elevation datum

Use the 1985 national elevation benchmark;

c) Map projection

- 1) The 1:1 000 000 scale uses a positive-axis equiangular-cone projection;
- 2) Gauss-Kruger projection with scale of 1:250 000 ~ 1:500 000, 6 sub-band;
- 3) Gauss-Kruger projection with a scale of 1:500 ~ 1:10 000, with 3 sub-band.

4.3.2 Data organization

a) Vector data organization

- 1) Vector data is organized hierarchically according to data content and annual (or update cycle).
- 2) In the same data layer, data can be organized by administrative area, forestry administrative area, map sheet, etc.

b) Raster data organization

- 1) Digital elevation model, digital grid map, and digital orthophoto data are organized according to GB/T 13989;
- 2) Remote sensing images are organized in accordance with 8.3 of LY/T 1954-2011.