

HJ

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

HJ 1167-2021

**National Ecological Status Survey and Evaluation Technical
Specifications-Field Observation of Forest Ecosystem**

全国生态状况调查评估技术规范——森林生态系统野外观测

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Table of Contents

Foreword
1 Scope
2 Normative references
3 Terms and Definitions
4 General
5 Technical process
6 Types of forest ecosystems
7 Field Observation Plot Selection and Plot Setting
8 Field observation index system
9 Field observation techniques and methods
Appendix A (Normative Appendix) Field Survey Record Form

1 Scope of application

This standard specifies the general rules, technical process, field observation sample plot selection and quadratic setting, field observation of forest ecosystems Requirements for the indicator system and field observation techniques and methods.

This standard is applicable to the field observation of terrestrial forest and shrub ecosystems in the national and provincial administrative regions. Other geographical areas can refer to this standard.

implement.

2 Normative references

This standard refers to the following documents or clauses thereof. For dated references, only the dated version applies to this standard.

For undated references, the latest edition (including all amendments) applies to this standard.

GB/T 14721 Forestry Resources Classification and Code Forest Types GB/T 26424
Technical Regulations for the Survey of Forest Resources Planning and Design GB/T
30363 Technical Specifications for Monitoring Forest Vegetation Condition GB/T 33027
Long-term positioning observation method of forest ecosystem GB T 35221 General
Principles of Surface Meteorological Observation Specifications HJ/T 166 Technical
Specification for Soil Environment Monitoring HJ 710.1 Technical Guidelines for Biodiversity

Observation Terrestrial Vascular Plants HJ 1166 National Ecological Status Survey and Evaluation Technical Specifications--Ecosystem Remote Sensing Interpretation and Field Verification LY/T 2258 Technical Specifications for Modeling Methods of Standing Tree Biomass LY/T 2259 Technical specification for sample collection for stumbling biomass modeling SL 276 Hydrological Infrastructure Construction and Technical Equipment Standard

3 Terms and Definitions

The following terms and definitions apply to this standard.

stand

The internal characteristics of the forest (such as tree species composition, canopy level, age, canopy closure, origin, status level or yield, etc.) are basically the same, while A forest that is distinct from the surrounding forest. Forest stands are often used as the basis for determining forest management measures, and different forest stands need to take different measures.

business measures.

forest ecosystem

An ecosystem composed of arbor-dominated biological communities and abiotic environments, including coniferous forests, broad-leaved forests, and mixed coniferous and broad-leaved forests in this standard.

Cross and sparse forests.

Tally tally

A basic investigation work in forestry investigation, the purpose is to obtain forest stand data and measure the breast height of each tree in the sample plot that meets the measurement standard.

indicators such as diameter.

4 General

Field observations of forest ecosystems should follow the principles of normative, operable, advanced, and economic and technical feasibility.

5 Technical process

This standard formulates the identification of forest ecosystem types, the setting of sample plots, the construction of observation index system, and the definition of field observation techniques and methods.

and other technical processes, as shown in Figure 1.

6 Types of forest ecosystems

According to the ecosystem classification system in HJ 1166, the types of forest ecosystems include coniferous forests, broad-leaved forests, mixed coniferous and broad-leaved forests, and rarefied forests.

sparse forest.

7.1 Plot selection

7.1.1

The selection of sample plots should be representative and typical, and avoid the selection of sample plots in areas with unclear ownership and frequent changes.

7.1.2

The field sampling rate is an average of 1 fixed sample plot per 10 000 km². It is recommended to select the existing sample plot as the fixed sample. Consider representation, economy, feasibility, etc., and make appropriate arrangements according to the actual situation of each region, such as in areas where ecosystem types are staggered and complex.

The number of sample plots can be appropriately increased in the domain, and the number of sample plots can be appropriately reduced in the area with a single type.

7.1.3

For the observation object, if possible, select at least 2 sample plots that can represent the observation object, the surface coverage is relatively uniform, the sample area is 10,000 m².

7.1.4

The sample plot should be selected on the flat land with the same ecosystem type or on the slope with relatively uniform gentle slope.

7.2 Layout of plots

7.2.1

The plots should reflect the changing characteristics of various forest ecosystems with terrain, soil and human environment, etc.

For 2 replicated quadrats, the size of the quadrat is set according to different climate zones and forest types, generally 20 m x 20 m, and the shrub quadrature is 20 m x 20 m.

10m x 10m.

7.2.2

For homogeneous ground sample plots, simple random sampling should be performed in the area instead of the overall distribution.

7.2.3

For non-uniform ground sample plots, stratified sampling should be carried out according to the degree of spatial heterogeneity within the sample plot, requiring relatively uniformity within the stratum, and sampling within the stratum.

Local uniform sampling is carried out within the layer to express the parameters of each layer.

7.2.4

In order to investigate the growth status of forest understory vegetation (species, vegetation height, coverage, biomass, etc.) Arrange no less than 4 understory vegetation quadrats with an area of not less than 1 m², and try not to arrange them at the edge of the quadrats.

8 Field observation index system

Field observations of forest ecosystems are mainly carried out for coniferous forests, broad-leaved forests, mixed coniferous and broad-leaved forests and sparse forests, including basic conditions, Forest type, gauge per wood, stand index and understory vegetation. According to different observation contents, different field observation indicators (Table 1) are set.

The measurement time can be combined with the differences between the north and the south and the differences in tree species, and it is carried out in the most vigorous time of the growth period, in principle, from July to September. record of observations refer to Table A.1 to Table A.3 in Appendix A for details.

9.1 Altitude

Can be extracted using a Digital Elevation Model (DEM) or measured by GPS.

9.2 Terrain types

Using the observation method, it is divided into plains, hills and mountains, which can be refined and remarked on this basis according to the actual situation. The types are as follows.

- a) Plain. flat and open, and the relative height difference is less than 50 m;
- b) Hills. there is no obvious vein, the slope is gentle, and the relative height difference is less than 100 m;
- c) Mountainous area. the undulations are large, the peaks and valleys are obvious, the