

HJ

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

HJ 1170-2021

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

全国生态状况调查评估技术规范——荒漠生态系统野外观测

(English Translation)

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1 Scope of application

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

This standard is applicable to the field observation of desert ecosystems in the national and provincial administrative regions, and other geographical regions can refer to this standard.

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 33867 Hemispherical pyranometer method for measuring photosynthetically active radiation
GB/T 35226 Specification for ground meteorological observation air temperature and humidity
GB/T 35227 Standardized wind direction and speed for ground meteorological observation
GB/T 35228 Standardized Precipitation for Surface Meteorological Observation
GB/T 35230 Standardized Evaporation of Surface Meteorological Observation
HJ 615 Determination of Soil Organic Carbon Potassium Dichromate Oxidation-Spectrophotometric Method
HJ 710.3 Technical Guidelines for Biodiversity Observation Terrestrial Mammals
HJ 710.5 Technical Guidelines for Biodiversity Observation Reptiles
HJ 962 Potentiometric

Method for Determination of Soil pH HJ 1166 National Ecological Status Survey and Evaluation Technical Specifications--Ecosystem Remote Sensing Interpretation and Field Verification LY/T 1225 Determination of Forest Soil Particle Composition (Mechanical Composition) LY/T 1752 Technical Specification for Positioning Observation of Desert Ecosystem LY/T 2258 Technical Specifications for Modeling Methods of Standing Tree Biomass LY/T 2259 Technical specification for sample collection for stumbling biomass modeling NY/T 1121.4 Soil Testing Part 4: Determination of Soil Bulk Density

3 Terms and Definitions

The following terms and definitions apply to this standard.

desert ecosystem

Biomes dominated by ultra-xerophyte, xerophytic small trees, shrubs, semishrubs, and herbaceous plants, as well as sparse precipitation, intense evaporation, A natural ecosystem formed by arid abiotic environments, including deserts and sandy land in this standard.

desert

The product of the dry climate on the earth's surface, generally the average annual rainfall is less than 250 mm, the vegetation is sparse, the surface runoff is small, and the wind effect is obvious.

It is obvious that the land that produces unique landforms, such as various sand dunes, poor wind erosion land, etc.

sandy land

Land in semi-arid or semi-humid areas covered by sand dunes, usually dominated by fixed or semi-fixed dunes.

4 General

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

5 Technical process

This standard formulates the identification of desert 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 desert ecosystems

According to the ecosystem classification system in HJ 1166, the types of desert ecosystems in this standard include deserts and sandy land.

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 sampling rate in the field is an average of 1 fixed sample plot per 10 000 km², and the existing sample plots are selected as solid samples in combination with different types of sandy land.

Determine the sample plot, and comprehensively consider representativeness, economy, feasibility, etc., and make appropriate arrangements according to the actual situation of each region.

The number of plots can be appropriately increased in wrong and complex areas, and the number of plots can be appropriately reduced in areas 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 variation characteristics of various desert ecosystems with terrain, soil and human-made environment, and should be set according to the type of plots.

Each plot must have at least 3 replicates.

7.2.2

Set different square sizes according to different vegetation types of the desert. The size of the woody plant is 20 m x 20 m, and the size of the herbaceous plant is large.

As small as 1 m x 1 m.

7.2.3

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

7.2.4

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.

8 Field observation index system

Field observations of desert ecosystems are mainly carried out on deserts and sandy land, including type indicators, biological indicators, soil indicators and meteorological indicators.

index. According to different observation contents, different field observation indicators are set (Table 1).

9.1 Types of deserts

According to the size of the survey scope, use the method of on-site survey to determine the type of desert.

9.2 Desert vegetation types

Using the sample method, classify and count the vegetation types in different quadrats, and classify and count multiple quadrats in the same desert type area.

The results are averaged to determine the vegetation type of the desert.

9.3 Vegetation Coverage

The vegetation coverage of desert ecosystems was observed by a combination of visual and photographic methods. Use higher pixel camera to obtain vegetation cover the digital photos of the cover were taken repeatedly for 2 to 3 times. Finally, the vegetation coverage of each photo was calculated separately, and the average value was taken as the vegetation coverage of the plot.

Spend. For areas that are not easily recognized by the camera, the vegetation coverage is observed by visual observation.