

HJ

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

HJ 1168-2021

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

全国生态状况调查评估技术规范——草地生态系统野外观测

(English Translation)

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1 Scope of application

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

This standard is applicable to the field observation of terrestrial grassland ecosystems in the national and provincial administrative regions, and other geographical areas may refer to this standard for implementation.

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 36197 Soil Quality Soil Sampling Technical Guide GB/T 50138 Water level observation standard GB 9834-88 Determination of soil organic matter HJ/T 164 Technical Specification for Groundwater Environmental Monitoring HJ 615 Determination of Soil Organic Carbon Potassium Dichromate Oxidation-Spectrophotometric Method 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) NY/T 53 Soil Total Nitrogen Determination Method NY/T 1121.4 Soil Testing Part 4: Determination of Soil Capacity NY/T 1233 Technical Regulations for Grassland Resources and Ecological Monitoring SL 276 Hydrological Infrastructure Construction and Technical Equipment Standard

3 Terms and Definitions

The following terms and definitions apply to this standard.

grassland ecosystem

Under continental sub-humid and semi-arid climates in mid-latitudes, plant communities dominated by annual or perennial herbaceous vegetation, this Meadow, grassland, grass and sparse grass are included in the standard.

meadow

Vegetation type composed of perennial herbs that form in moderately humid conditions.

prairie

A type of vegetation dominated by herbaceous plants that develops in temperate semi-arid climates.

Continuation table

Observation Content	Observation Index	Index Definition	Observation Time	Observation Frequency
Soil Index	Soil Total Nitrogen	The sum of various forms of nitrogen in the soil - once a year	Disaster indicators	grassland disasters
Main observation and survey grassland disasters include. pests, rodents, fires, etc. - once a year				

9.1 Grassland dominant species

The photographic method was mainly used to measure the dominant species of vegetation. The composition of herbaceous plant communities was adjusted in the grassland ecosystem observation area.

Check, use the camera to obtain digital photos of dominant species, and record them.

9.2 Excessive

The total number of individuals of a certain plant species in the community in the quadrature was visually observed by the sampling method.

9.3 Vegetation Coverage

The vegetation coverage of grassland 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.

9.4 Community height

Colony heights are determined using a graduated ruler; multiple measurements should be taken and then averaged.

9.5 Frequency

A sample circle with a diameter of 35.6 cm was randomly tossed 20 times in the field plot.

The number of sample circles that a certain plant appears in as a percentage of the total number of sample circles.

9.6 Leaf Area Index

Measured using a canopy analyzer. The canopy analyzer was placed on the ground under the herb layer of the grassland community, and the entire community was scanned, and the results were obtained.

The total leaf area index of the community; for low grassland, it is obtained by photographic imaging technology, and the vegetation at a specific angle (57.5°) is obtained by obtaining the canopy clearance ratio was used to calculate the leaf area index.

9.7 Biomass

9.7.1

The field observation of biomass should be carried out during the peak period of plant growth. The main method is to place no less than three plots above the ground.

All green parts were cut off the ground with scissors, and the litter was collected.

Regardless of species, they were put into envelope bags according to the plot and marked. pair collection After weighing the fresh weight of the samples, they were dried at 65 °C to a constant weight, and the dry weight was weighed. The average dry weight values in multiple plots were obtained to obtain the unit area (1 m²).

biomass.

9.7.2

Subsurface biomass. obtain the root-shoot ratio of the plot range through the actual measurement of a certain amount of plots, and calculate other samples according to the measured root-shoot ratio.

square underground biomass.

9.8 Groundwater level

Use self-recording water level gauge or water level tube and steel ruler water level gauge to measure the groundwater level, the specific measurement basis can refer to HJ/T 164 and Implementation of relevant requirements of GB/T 50138.

9.9 Grassland evapotranspiration

By setting up the instrument for the observation quadrat, it can be directly observed or measured by the turbulent exchange method. The direct observation of the instrument mainly adopts the lysimeter.

A container filled with soil with bare or growing vegetation on the surface to measure the total water consumption by soil evaporation and plant transpiration. turbulent exchange method the eddy correlator is mainly used, which is installed on the surface level and uniform sample plot to measure the grassland evapotranspiration.

9.10 Runoff

The grassland ecosystem usually conducts river runoff observation, relying on existing hydrological observation stations for observation; if there is no existing fixed station, the nearest Select runoff observation points on rivers with large flow and wide channels, install runoff observation facilities, and try to use automatic observation equipment (velocity meter) Observations are carried out, and the construction of hydrological infrastructure is carried out in accordance with the relevant requirements of SL 276.

9.11 Slope

The slope can be extracted with a digital elevation model (DEM) or measured with tools such as a compass.

as follows.

- a) Grade I is a flat slope. $0^{\circ}\sim 5^{\circ}$;
- b) Grade II is gentle slope. $5^{\circ}\sim 15^{\circ}$;
- c) Grade III is slope. $15^{\circ}\sim 25^{\circ}$;
- d) Grade IV is steep slope. $25^{\circ}\sim 35^{\circ}$;