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

GB/T 21439-2026

Replacing GB/T 21439-2008

Assessment of rangeland health status

草原健康状况评价

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Foreword

This document complies with the provisions of GB/T 1.1-2020 "Standardization Work Guidelines Part

1. Structure and Drafting Rules of Standardization Documents". Drafting. This document replaces GB/T 21439-2008 "Grassland Health Status Assessment". Compared with GB/T 21439-2008, except for structural adjustments and... Aside from editorial changes, the main technical changes are as follows:

---The terms "territory," "soil (territory) stability," "hydrological function," "biological integrity," "ecological reference zone," "bare land," "soil compaction," "soil bulk density," "wind erosion," "water flow traces," "ditches," "grooves," "plant communities," "surface stock," "litter," "dominant species," and "invasive plant species" have been deleted (see 3.3-

3.20 of the.2008 edition);

---The definitions of the terms "grassland," "grassland health," and "important value" have been revised (see 3.1, 3.2, 3.10; 3.1, 3.2,

3.19 in the.2008 edition);

---The following terms have been added. "vitality," "organization," "resilience," "above-ground biomass," "grass height," "coverage," "edible forage," "stress tolerance index," and "reference value" (see 3.3-3.9, 3.11, and 3.12);

---The "Grassland Health Status Evaluation Indicators and Explanations" have been revised (see Table 1, Table 1 in the.2008 edition);

---The measurement and classification of "bare land", "wind erosion", "soil compaction", "water flow traces", "ditches", "grooving", "litter movement", "dominant species", "litter amount", "surface stock", and "invasive species" have been deleted (see 4.2.1, 4.2.2, 4.2.4~

4.2.12 of the 2008 edition);

---Added settings and measurement methods for "sample plots and quadrats" (see 4.2);

---Added "relative aboveground biomass", "relative grass height", "relative community cover", "species diversity index", and "perennial species prevalence". The calculation of indicators such as "ratio of edible forage grass", "soil bulk density", and "relative stress tolerance index" (see 4.3.1~4.3.7, 4.3.9);

---Added "Health Indicator Score" (see 5.1);

---Steps one through four and step six of the evaluation process have been removed (see sections 5.1-

1 Scope

GB/T 21439-2026 is the Chinese national standard covering whether a grassland is healthy or degrading - the vegetation cover and composition, the palatable species remaining, the soil surface condition and erosion, and the classification into health grades that determines the grazing allowed. China's rangelands cover some 40% of its land area and much of it is degraded. It replaces GB/T 21439-2008 and has been in force since 1 October 2026. It was issued on 31 March 2026 and takes effect on 1 October 2026, replacing GB/T 21439-2008. The document is under the responsibility of the Ministry of Agriculture and Rural Affairs. This page is published from the official record of the 2026 edition; the clause text of a standard this recent is not yet in circulation, and the figures, limits and tables it contains are those of the document itself, delivered in full with the English translation.

This document establishes the evaluation indicators for grassland health status assessment, specifies the scoring of health indicators, the calculation of the health index, and the health status. Classification. This document applies to the assessment of grassland health status.

4 Evaluation Indicators

4.1 Indicator Description The grassland health status evaluation indicators include 3 primary indicators and 9 secondary indicators, as shown in Table 1.

4.2 Sample plots and quadrats

4.2.1 Settings Select sample plots according to NY/T 1233. Establish three transects with an included angle of 120°, using the center of the representative area of the sample plot as the base point. The transect length is... At a depth of 50m, quadrats were laid out along the transect at 10m intervals, with a quadrat area of 1m x 1m; targeting warm-climate and tropical shrub-grassland species (see...). In Appendix A, Table A.1), the transect length is 100m, and quadrats are laid out at 20m intervals, with a quadrat area of 5mx5m.

4.2.2 Measurement Method Aboveground biomass, height, and cover were measured in each quadrat, and soil samples were collected. Topsoil was measured according to NY/T 1121.4. The bulk density of the topsoil (0cm~10cm) was determined according to NY/T 1121.6.

4.3 Indicator Calculation

4.3.1 Relative aboveground biomass During the peak growth period of the plant community, the total weight of aboveground dry matter in the quadrat was measured. The relative aboveground biomass was calculated according to formula (1).

4.3.2 Relative Grass Height During the peak growth period of the plant community, the natural height from the ground to the top of the grass was measured within each quadrat, with 7 to 10 measurements taken randomly within each quadrat. Next, calculate the relative grass height according to formula (2).

4.3.3 Relative community cover During the peak growth period of the plant community, the ratio of the vertical projection area of the aboveground parts of the plants within the quadrat to the total surface area of the quadrat was estimated using the grid method. Example. Calculate the relative community cover using formula (3).

4.3.4 Species Diversity Index During the peak growth period of the plant community, the importance values of each species within the quadrat were measured. The species diversity index was calculated using formula (4). (Each quadrat...) The average value is used as the value of the sample plot.

4.3.5 Perennial species proportion The percentage of perennial species is calculated using formula (5).

4.3.6 Percentage of edible forage Calculate the percentage of edible forage using formula (6).

4.3.7 Soil bulk density Calculated according to NY/T 1121.4.

4.3.8 Soil organic matter Calculated according to NY/T 1121.6.

4.3.9 Relative stress tolerance index The relative stress tolerance index is calculated according to formula (7).

5 Health Assessment

5.1 Health Indicator Scores Based on the above nine evaluation indicators and their measurement results, the grassland health status is scored using a 5-point scale, with scores of 1, 2, 3, and 4 respectively. Scoring is based on 4 or 5 points; the higher the score, the better the grassland's health. Scoring is done according to Table 2.

5.2 Health Index Calculation

5.2.1 Vitality Health Index Calculate the vitality health index according to formula (8).

5.2.2 Organizational Health Index Calculate the health index of tissue strength according to formula (9).

5.2.3 Health Index of Resilience Calculate the health index of resilience using formula (10).

5.2.4 Composite Index The grassland health index is calculated using formula (11).

5.3 Health Status Classification The grassland health status is determined according to the grassland health comprehensive index in Table 3. GB/T 21439-2026. Grassland Health Status Assessment ICS

40 National Standards of the People's Republic of China Replaces GB/T 21439-2008 grassland health status assessment Published on 2026-03-

31 Implemented on October 1, 2026 State Administration for Market Regulation The State Administration for Standardization issued a statement.