

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

HJ 710.10-2014

**Technical guidelines for biodiversity monitoring. Large-and
medium-sized soil animals
(English Translation)**

Issued on: October 31, 2014

Implemented on: January 1, 2015

Issued by: Ministry of Ecology and Environment

Table of Contents

Foreword

1 Observation techniques guide the medium-sized soil animal biodiversity

2 Normative references

3 Terms and Definitions

4 Observations principle

4.1 Scientific Principles

4.2 Operability principles

4.4 Principle of protection

24.5 Security Principles

Foreword

To implement the "People's Republic of China Environmental Protection Law", "People's Republic of China Wild Animal Protection Law" to regulate Our observations of biological diversity, the development of this standard.

This standard specifies the medium and large soil invertebrates Biodiversity Observation main contents, technical requirements and methods.

The Standard Appendix A, B, C, D, E, F are informative appendix.

This standard is the first release.

This standard is developed by the Ministry of Environmental Protection Science, Technology organization.

Drafting of this standard. Shanghai Institute of Plant Physiology and Ecology Institute of Biological Sciences, Environmental Protection Nanjing Institute of Environmental Sciences.

This standard MEP October 31, 2014 for approval.

This standard since January 1, 2015 implementation.

The standard explanation by the Ministry of Environmental Protection.

1 Observation techniques guide the medium-sized soil animal biodiversity

1 Scope

This standard specifies the medium and large soil invertebrates Biodiversity Observation

main contents, technical requirements and methods.

This standard applies to the observation within the scope of People's Republic of China medium and large soil invertebrate diversity.

2 Normative references

This standard refers to the contents of the following documents or the terms. For undated references, the latest edition of to this standard.

GB 10111 using random numbers dice random sampling method Analyzing and processing GB/statistical processing and interpretation of normal sample outliers T 4883 data GB/T 7714 after bibliographic references packet rules GB/T 8170 repair value expressed about the rules and limit values and judgment HJ 623 regional evaluation standards Biodiversity

3 Terms and Definitions

The following terms and definitions apply to this standard.

Soil Fauna medium-sized soil animal/mesofauna it means a body of surface soil or litter to live in a wide invertebrate soil fauna of 0.1 ~ 2 mm.

Soil macrofauna large-sized soil animal/macrofauna it means a body of surface soil or litter to live in a wide invertebrate soil fauna of 2 ~ 20 mm.

Soil animal communities in soil animal community the summation of all the living environment of soil animal populations means, generally refers to a direct or indirect relationship between various biological Regular combined populations.

4.1 Scientific Principles

Observation plots and observing the object should be representative, covering major habitat type observation area should be limited observation area the better reflect the basic characteristics of the observation area of soil fauna, plots can not be set on the two communities in the transition zone.

4.2 Operability principles

Observation program should be considered owned by the human, financial and logistical support and other conditions, make observations feasible. Should be used High efficiency, low cost methods of observation. Global Positioning System (GPS) locator and so do a good job of positioning the sample identification.

4.3 principles of sustainability, Observations should meet the needs of biodiversity conservation and management, and to the protection and management play a guiding role in early warning.

Observation plots, plots and samples, once established, can not be altered arbitrarily.

4.4 Principle of protection

Insist on the protection of the first, as far as possible the use of non-invasive sampling method, to avoid frequent unscientific observation, resulting in large and medium soil animal damage.

24.5 Security Principles

Observation has certain characteristics of field work, the observer should receive professional training, good protective measures.

5 Methods of Observation 5.1 observation program 5.1.1 clear objective observation and observation area Observations target species in the region to grasp the soil fauna composition, distribution and population dynamics; or assessment of threats to Effects of soil animals and soil produced; or soil fauna and soil conservation measures and the effectiveness of policies, and proposes to adapt Management measures. In determining the observation target should be clear after the observation area.

5.1.2 determine observation target Soil fauna observation target for large and medium-sized soil surface and soil within the soil fauna, comprising.

a) large soil fauna. earthworms (Annelida Oligochaeta), centipede (Arthropoda Chilopoda), millipedes (section Arthropods door diplopoda), spiders (Arthropoda Arachnida), beetles and ants (Arthropoda Insecta), etc;

b) medium-sized soil fauna. soil mites (Arthropoda Arachnida), springtails (Collembola Arthropoda) and the like.

5.1.3 Data collected by the observation area, presented observational programs Observations collected objects ecology and population characteristics of information and observation area topographic maps, vegetation maps, climate, hydrology, soil Soil and other basic information, observation and formulate plans. Observations plan should include. observation target setting, plot, plots, sample points, Methods of observation, contents and index, observation time and frequency, data analysis and reporting, quality control and safety management.

5.1.4 Prepare observation equipment and instruments Including shovels, forceps, sample bags, plastic bottles, alcohol, poison bottles, saving liquid, toilet paper, ruler, plastic cups, quantitative Samplers, GPS locator, with a macro lens digital camera, observation records lists.

5.1.5 implementation of field observations Before the implementation of field observations, coping observer observation methods and practices of training, organize observation team. strict Georgia in accordance with field data collection practices, detailed records of all types

of observational survey, the sampling process photo shoot, including plots, Plots, samples, habitats and specific collection and so on.

5.1.6 Analysis of data and preparation of observation reports the collected data collation, analysis and preparation of observation reports

5.2 Setting the observation plots and sample points

5.2.1 Observation Field Settings 5.2.1.1 using simple random sampling or systematic sampling method to select plots.

5.2.1.2 Simple random sampling. Dividing the observed area into grids, each grid is assigned a number, after determining the number of plots, A predetermined number of random samples, the corresponding number is grid-like arranged site. Random number can be used to get the dice Child, draw, check the table of random numbers approach. The use of a random number of dice See GB 10111.

5.2.1.3 Systematic sampling method. Press the environmental gradients such as altitude, water equidistant sampling.

5.2.1.4 plots should be chosen to cover the major ecosystem types. The number of plots shall comply with the requirements of statistics and consider people Force, capital and other factors. Individual plot area is usually not less than 1 ha (100 m x 100 m).

5.2.1.5 using GPS locator observation plots accurately locate and mark the location of plots on topographic map (like habitat Elements recording table see Appendix A).

5.2.2 sample plots and settings 5.2.2.1 random within each sample or even set up five representative plots, plots for each area of 25 m² (5 m x 5

m), the distance between the plots usually more than 100 m (Fig. 2).

5.2.2.2 For medium soil fauna, in every kind of prescription provided four 20 cm x 20 cm evenly distributed samples (Figure 1).

5.2.2.3 For large soil fauna in quadrats set up two 30 cm x 30 cm uniformly distributed samples (Fig. 2).

5.3 Field sampling methods

5.3.1 Soil Fauna

5.3.1.1 each sample point within an area of 400 cm² (20 cm x 20 cm) of plant litter collection bags loaded.

5.3.1.2 5.3.1.1 plant samples in each of the following litter collected two soil columns, each soil column section 20 cm² (radius 2.5 cm), height (soil depth) 0 ~ 10 cm, respectively, into a plastic bag and placed in a cool place (if the conditions in the sample when refrigerated at any time) (see Appendix Records Table B), one for dry and one for wet soil animals were