A Big Earth Data Platform for Three Poles

**HiWATER: Observation dataset of fractional vegetation cover by digital camera in the downstream of the Heihe River Basin (2014)**

1、Description

The fractional vegetation cover observation was carried out for the typical underlying surface in the lower reaches of the Heihe River Basin during the aviation flight experiment in 2014. The observation started on 24 July, 2014 and finished on 1 August, 2014.
1. Observation time
On days of 24 July, 27 July, 30 July, 31 July and 1 August, 2014
2. Samples method
Large areas with homogeneous vegetation (greater than 100 m \* 100 m) were chosen as the observation samples. And forty field samples were selected according to the characteristics of vegetation distribution in the low reaches. The land-use types including the cantaloupe, the Tamarix chinensis, the reeds, the weeds, the Karelinia caspica, the Sophora alopecuroides and so on.
3. Observation methods
3.1 Instruments and measurement method
Digital photography measurement is implemented to measure the FVC. Plot positions, photographic method and data processing method are dedicatedly designed. In field measurements, a long stick with the camera mounted on one end is beneficial to conveniently measure various species of vegetation, enabling a larger area to be photographed with a smaller field of view. The stick can be used to change the camera height; a ﬁxed-focus camera can be placed at the end of the instrument platform at the front end of the support bar, and the camera can be operated by remote control.
3.2 Photographic method
 The photographic method used depends on the species of vegetation and planting pattern. A long stick with the camera mounted on one end is used for the Tamarix chinensisi and reeds. For the Tamarix chinensisi and reeds, rows of more than two cycles should be included in the ﬁeld of view (<30), and the side length of the image should be parallel to the row. If there are no more than two complete cycles, then information regarding row spacing and plant spacing are required. The FVC of the entire cycle, that is, the FVC of the quadrat, can be obtained from the number of rows included in the field of view. For other vegetation , the photos of FVC were obtained by directly photographing for the lower heights of the vegetation.
3.3 Method for calculating the FVC
The detail method of the FVC calculation can be found in the reference below. Many methods are available to extract the FVC from digital images, and the degree of automation and the precision of identification are important factors that affect the efficiency of field measurements. This method, which is proposed by the authors, has the advantages of a simple algorithm, a high degree of automation and high precision, as well as ease of operation (see the reference).
4 Data storage
The observation recorded data were stored in excel and the original FVC data were stored in photos.

2、Keywords

Theme：Vegetation,Vegetation cover
Discipline：Terrestrial Surface
Places：Heihe River Basin, the natural oasis eco-hydrology experimental area in the lower reaches
Time：2014, 2014-07-22, 2014-07-27, 2014-08-01, 2014-07-30, 2014-07-31

3、Data details

1.Scale：None

2.Projection：4326

3.Filesize：1698.0MB

4.Data format：文本

4、Space scope

|  |  |  |
| --- | --- | --- |
| - | north：42.45 | - |
| west：100.95 | - | east：101.35 |
| - | south：41.85 | - |

5、Time frame:2014-07-29 00:00:00+00:00--2014-08-08 23:59:11+00:00

6、Reference method

References to data:

Zhou Shengnan. HiWATER: Observation dataset of fractional vegetation cover by digital camera in the downstream of the Heihe River Basin (2014). A Big Earth Data Platform for Three Poles, doi:10.3972/hiwater.271.2015.db2015

References to articles:

7、Supporting project information

Heihe Watershed Allied Telemetry Experimental Research (HiWATER)

8、Data resource provider

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