时空三极环境大数据平台

**Bottom-up estimates of reactive nitrogen loss from Chinese wheat production in 2014**

英文标题：Bottom-up estimates of reactive nitrogen loss from Chinese wheat production in 2014

1、摘要

The excessive use of synthetic nitrogen (N) for Chinese wheat production results in high loss of reactive N (Nr; all forms of N except N2) into the environment, causing serious environmental issues. Quantifying Nr loss and spatial variations therein is vital to optimize N management and mitigate losses. However, accurate, high spatial resolution estimations of Nr loss from wheat production are lacking due to the limitations of data generation and estimation methods. Here, we applied the random forest (RF) algorithm to bottom-up N application rate data, obtained through a survey of millions of farmers, to estimate the Nr loss from wheat production in 2014. The results showed that the average total Nr loss was 52.5 kg N ha-1 (range: 4.6–157.8 kg N ha-1), which accounts for 26.1% of the total N applied. The hotspots for high Nr loss are the same as those for high applied N, including northwestern Xinjiang, central-southern Hebei, Shandong, central-northern Jiangsu, and Hubei. Our database could guide regional N management and be used in conjunction with biogeochemical models.

2、关键词

主题关键词：小麦,农业资源,环境评价,肥料,环境污染与治理  
学科关键词：人地关系  
地点关键词：Chinese wheat distribution, China  
时间关键词：2014

3、数据细节

1.比例尺：None

2.投影：Albers

3.文件大小：8.7MB

4.数据格式：None

4、空间范围

|  |  |  |
| --- | --- | --- |
| - | 北：53.55 | - |
| 西：73.55 | - | 东：135.08 |
| - | 南：3.58 | - |

5、时间范围2013-12-31 16:00:00+00:00--2014-12-30 16:00:00+00:00

6、引用方式

数据的引用:

Xingshuai TIAN. Bottom-up estimates of reactive nitrogen loss from Chinese wheat production in 2014. 时空三极环境大数据平台, DOI:10.11888/HumanNat.tpdc.272007, CSTR:18406.11.HumanNat.tpdc.272007, 2022.[TIAN Xingshuai . . A Big Earth Data Platform for Three Poles, DOI:10.11888/HumanNat.tpdc.272007, CSTR:18406.11.HumanNat.tpdc.272007, 2022]

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7、资助项目信息

8、数据资源提供者

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