County-level crop nitrogen budget history in the US during 1970-2019

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Introduction

This document describes the datasets for "Half-century history of crop nitrogen use efficiency in the conterminous United States: Variations over time, space and crop types" (Zhang et al. In Review). The datasets include county-level total nitrogen input rates, nitrogen use efficiency (NUE), crop recovered N, N surplus, and planting area of eight crop types, including barley, corn, cotton, durum wheat, rice, sorghum, spring wheat, and winter wheat, in the U.S. from 1970 to 2019. The datasets were used to produce the results of the paper and can also be reused to explore other topics. Please cite or acknowledge this dataset (https://doi.org/10.6084/m9.figshare.13030436) when using it. Eight data files are corresponding to the eight crop types. Each file has six columns:

"YEAR": Year of the data

"State": Name of the state

"crop_type": Crop type

"County": Name of the county

Area: Planting area, million hectors (Mha)

"Ninput": Total nitrogen input rate, unit in kg N ha^{-1} yr^{-1}

"NUE": Nitrogen use efficiency, unit in kg N kg^{-1} N

"Recovered N": Crop recovered nitrogen, unit in kg N ha^{-1} yr^{-1}

"Nsurplus": Nitrogen surplus, unit in kg N ha^{-1} yr^{-1}

Reference:

Zhang, J., Cao, P., Lu, C. Half-century history of crop nitrogen use efficiency in the conterminous United States: Variations over time, space and crop types. In Review.