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# Supplementary Materials:

# Wet Inorganic Nitrogen Deposition at the Daheitin Reservoir in North China: Temporal Variation, Sources, and Biomass Burning Influences

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**Table S1.** Wet N deposition rates (kg N $ha^{-1}$ $yr^{-1}$) in DHT region compared to those reported in other studies.

| Location | Type of site | Duration | N deposition rate (kg N $ha^{-1}$ $yr^{-1}$) | | | $NH_4^+/NO_3^-$ ratio | References |
|---|---|---|---|---|---|---|---|
| | | | $NH_4^+$-N | $NO_3^-$-N | DIN | | |
| DHT, North China | rural | 2019–2020 | 12.6 | 6.31 | 18.9 | 1.97 | This study |
| Guangzhou, China | rural | 2016–2017 | 5.9 | 5.2 | 11.1 | 1.13 | [1] |
| Guangzhou, China | rural | 2017–2018 | 7.0 | 6.2 | 13.2 | 1.13 | [1] |
| PRD, China* | complex | 2010–2017 | 1.5–18.9 | 1.4–18.4 | 5.2–37.3 | 1.10 | [2] |
| Nanjing, China | urban | 2003–2005 | 11.0 | 11.7 | 22.7 | 0.94 | [3] |
| Hangzhou, China | urban | 2003–2005 | 16.9 | 13.1 | 30.0 | 1.29 | [3] |
| Changshu , China | agricultural | 2003–2005 | 4.16 | 0.59 | 27.9 | 3.90 | [3] |
| Tai lake, China | complex | 2003–2005 | / | / | 27.0 | 1.50 | [4] |
| TGR, China** | rural | 2014 | 11.0 | 4.94 | 15.9 | 2.23 | [5] |
| TGR, China** | rural | 2015 | 7.38 | 3.28 | 10.6 | 2.25 | [5] |
| TGR, China** | urban | 2014 | 8.3 | 3.4 | 11.7 | 2.44 | [5] |
| TGR, China** | urban | 2015 | 12.2 | 4.9 | 17.1 | 2.49 | [5] |
| TGR, China** | complex | 2017–2018 | 8.25 | 3.41 | 11.7 | 2.40 | [6] |
| Beijing, China | urban | 2008–2010 | | | 27.9 | | [7] |
| Xinglong, China | rural | 2008–2010 | | | 16.3 | average at 2.7 | [7] |
| Yucheng, China | agricultural | 2008–2010 | | | 24.8 | | [7] |
| Tangshan, China | industry | 2008–2010 | | | 21.6 | | [7] |
| Guizhou, China | forest | 2016–2017 | 10.2 | 4.8 | 15.0 | 2.12 | [8] |
| Guizhou, China | agricultural | 2016–2017 | 12.6 | 4.7 | 17.3 | 2.68 | [8] |
| Beijing, China | rural | 2018–2019 | 4.6 | 3.4 | 8.0 | 1.35 | [9] |
| North China | complex | 2005–2006 | 13–21 | 5.0–10.0 | 18–32 | 2.48 | [10] |
| North China | complex | 1999–2004 | 20.9 | 9.7 | 30.6 | 2.14 | [11] |
| Northeast China | agricultural | 2004–2008 | 11.2 | 6.1 | 17.3 | 2.05 | [12] |
| Sichuan, China | agricultural | 2009–2013 | 12.6 | 4.7 | 17.3 | 2.68 | [13] |
| Sichuan, China | complex | 2011 | 10.9 | 41.9 | 52.7 | average at 1.38 | [14] |
| Sichuan, China | complex | 2016 | 15.5 | 34.1 | 71.1 | | [14] |
| Chongqing, China | Mountain | 2016 | 9.29 | 3.48 | 12.76 | 2.67 | [15] |
| Lake Qinghai, China | Grassland | 2017–2018 | 9.93 | 2.76 | 12.69 | 3.60 | [16] |
| Zhengzhou, China | urban | 2011 | 18.1 | 15.2 | 33.3 | 1.19 | [17] |
| Zhengzhou, China | urban | 2016 | 10.2 | 12.6 | 22.8 | 0.81 | [17] |
| Zhengzhou, China | urban | 2017 | 10.7 | 9.0 | 19.7 | 1.19 | [17] |
| Zhengzhou, China | urban | 2018 | 9.9 | 7.7 | 17.6 | 1.29 | [17] |
| Tongling, China | urban | 2010–2011 | 20.62 | 12.58 | 33.20 | / | [18] |
| Tongling, China | urban | 2015–2016 | 19.6 | 8.58 | 28.2 | / | [18] |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Southern Korea | agricultural | 2007 | 4.83 | 2.11 | 6.94 | 2.29 | [19] |
| Southern Korea | agricultural | 2008 | 6.09 | 2.60 | 8.69 | 2.34 | [19] |
| United State | national | 2011–2012 | 2.0 | 1.5 | 3.5 | 1.45 | [20] |
| Colorado, USA | forest | 2008–2009 | 1.28 | 0.69 | 1.97 | 1.86 | [21] |
| United State | parks | 2005–2007 | / | / | 0.5–1.2 | 0.89–2.04 | [22] |

* means Pearl River Delta, China; ** means Three Gorges Reservoir, China.

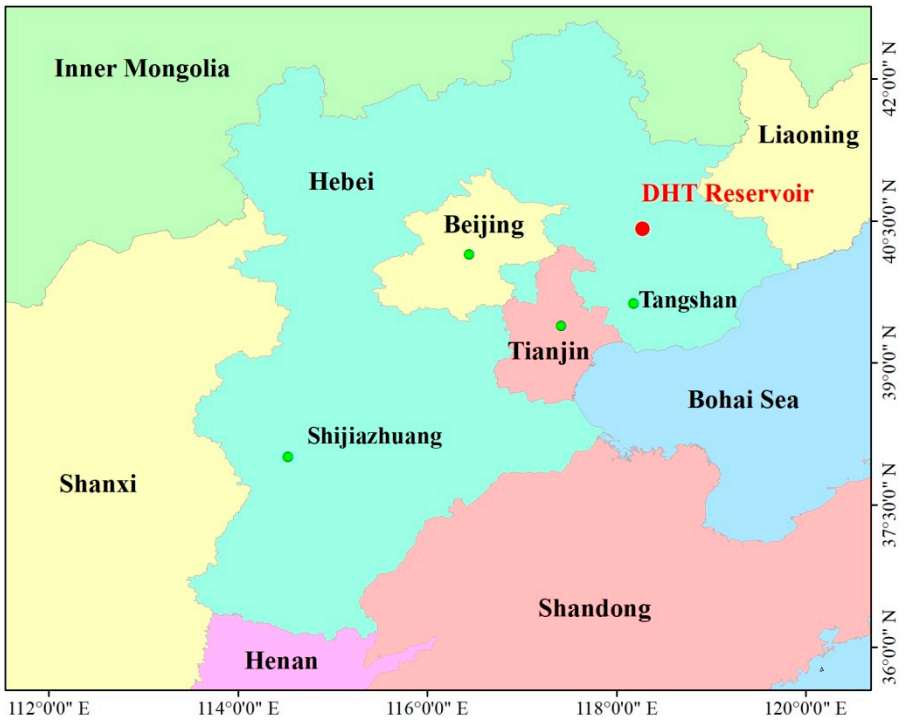


**Figure S1.** Location of Daheitin Reservoir station (red star) and the surrounding cities.

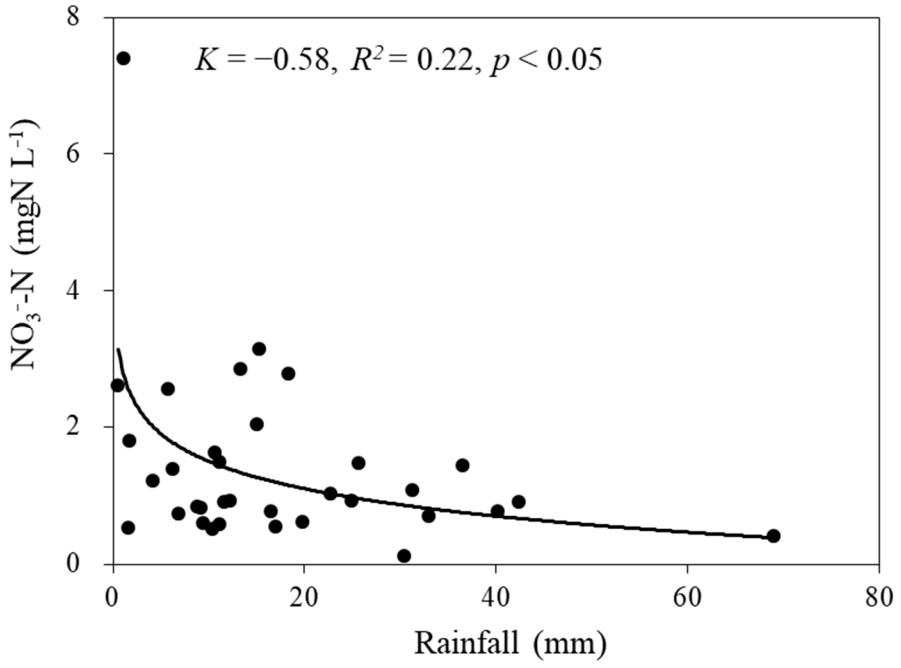


**Figure S2.** Relationship between the concentrations of $NO_3^-$-N in rainwater and rainfall amounts during each precipitation event at the DHT reservoir, a rural site in North China from July 2019 to June 2020. Statistical analysis was conducted with logarithmic fitting method.

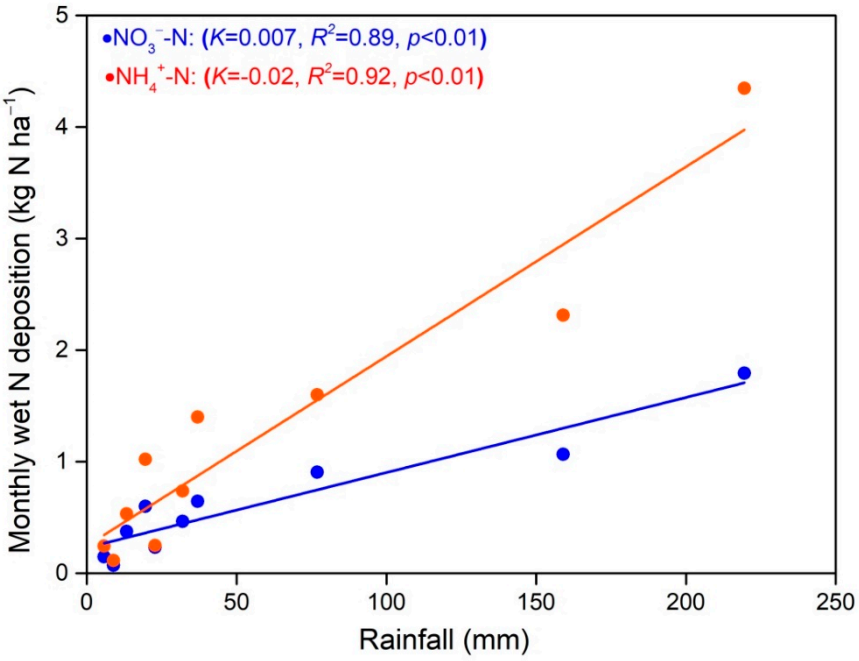


**Figure S3.** Relationship between monthly deposition rates of $NH_4^+$-N and $NO_3^-$-N and rainfall amounts at the DHT reservoir, a rural site in North China from July 2019 to June 2020. Statistical analysis was conducted with linear fitting method.

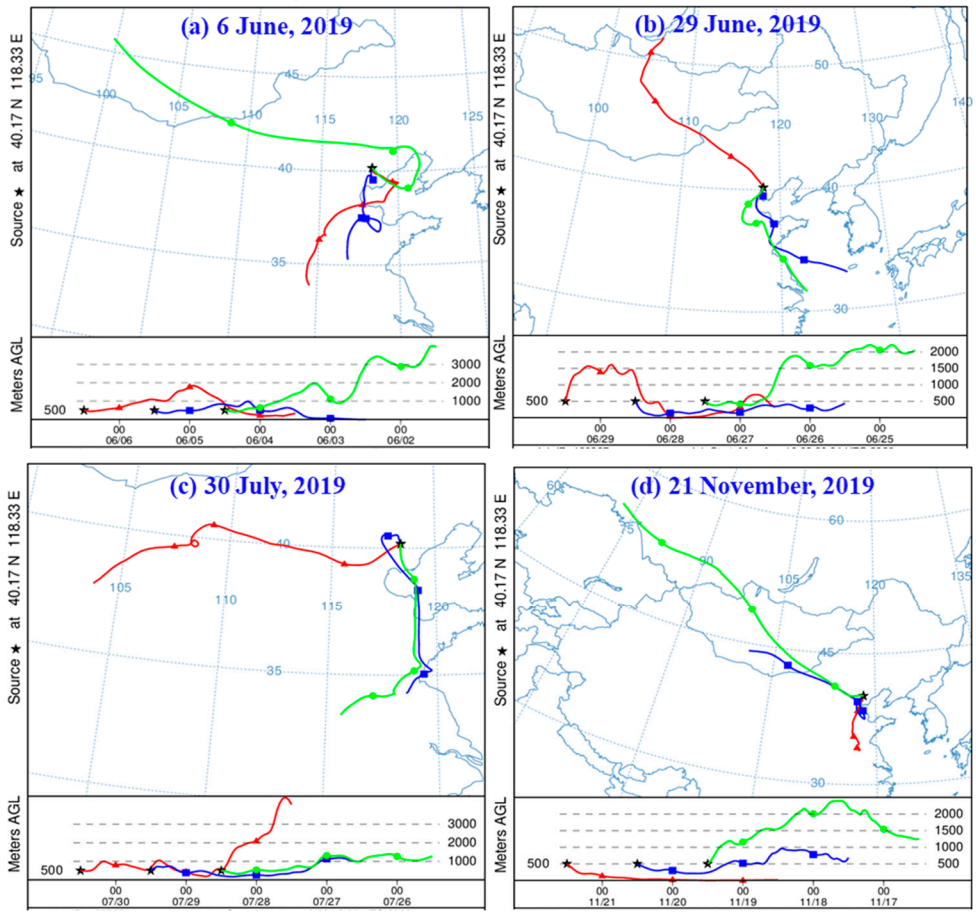


**Figure S4.** Air mass origins to DHT region, shown by clusters of 72 hours backward trajectories arriving at 500 m aboveground level in (**a**) 6 June, 2019, (**b**) 29 June, 2019, (**c**) 30 July, 2019, (**d**) 21 November, 2019.

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